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Education Topics in the Census

by

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Author's Note

The purpose of this report is to provide background information on vocational and post-secondary education as they are presented in the Census, and to offer suggestions on specific aspects of this field of education that could result in the improvement of future Census content specifications.

The three educational topics dealt with in the report are separated by colored dividers and described briefly below.

1. Educational Credentials in the Census - This report provides a detailed description of the secondary school graduation certificate, the non-university certificate or diploma, and the university degrees, certificates and diplomas. It also describes briefly the analytical potential of the Census concept of each of these credentials.

2. Post-Secondary Education in the Census - This report provides an overview of the vocational programmes provided by the community colleges and technical institutes with special reference to the transfer status of individual programmes.

3. Vocational Training in the Census - This report records steps and stages in the development of the vocational training course concept adopted for the 1971 Census, and the coding and classification system used for processing at the Regional Offices.

The author is grateful for the constructive comments that have been offered by readers in respect to these three educational topics, and which have made the final composite possible.

Educational Credentials in the Census

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Educational Credentials in the Census

Objective

The purpose of this report is to provide a detailed description of the concepts adopted for the educational credentials in the 1976 Census, and to review their potential for analytical studies.

Introduction

The educational credential as a subject for census inquiry was introduced in 1971 at which time it included the University Certificate or Diploma (below Bachelor level) and three broad categories designed to cover all university degrees. In the 1976 Census the question was developed further so that the degree categories were revised and certification other than that obtained at the university level was also reported (Figure I).

Figure 1

Educational Credentials, 1971 Census

24. Do you have a university degree, certificate or diploma?

Mark highest academic qualification.

- ○ No university degree, certificate or diploma
- ○ Yes, a university certificate or diploma (below Bachelor level)
- ○ Yes, Bachelor degree
- ○ Yes, First Professional degree
- ○ Yes, a Master's or equivalent, or earned Doctorate (*e.g., Ph.D., Ed.D.*)

Educational Credentials, 1976 Census

10. What degrees, certificates or diplomas have you ever obtained?

(See Instruction Booklet)

- ○ None
- ○ Secondary (high) school graduation certificate
- ○ Non-university certificate or diploma *(e.g. obtained at teachers' college, nursing school, community college, CEGEP)*
- ○ University certificate or diploma below bachelor level
- ○ Bachelor degree(s)
- ○ Degree in medicine, dentistry, or veterinary medicine *(M.D., D.D.S. or D.M.D., or D.V.M.)*
- ○ Master's degree(s)
- ○ Earned doctorate *(e.g. Ph.D.)*

In view of the hundreds of specialties within the areas of secondary, post-secondary non-university and university education, one may question the adviseability of attempting to obtain adequate information on the educational credential within the scope of seven broad classifications. Undoubtedly one benefit derives from the need for a more precise indicator of educational level in terms of completed programmes of study. Certainly, for example, statistical data for credentials will be helpful to economists who are

directing larger amounts of attention to the role of human capital (educational qualifications) in economic development as distinct from physical capital, and to educational researchers for whom achievement and underachievement (e.g., the drop-out population) will be more clearly depicted as a subject for analytical studies. There is also the obvious advantage of having a few credentials reported in the Census, even if on a broad category basis, in order to provide the universe for a sample from which more detailed information may be obtained in post-censal surveys.

The substance of this report is presented at the three levels of education: the Secondary School Graduation Certificate (Part I); the Non-University Certificate or Diploma (Part 2); and the University Certificate, Diploma, or Degree (Part 3). Suggestions for future Censuses and Conclusions are given in Parts 4 and 5.

1. The Secondary School Graduation Certificate

1.1 The Census Concept

It is shown in Figure I that the Census has adopted the broad interpretation of this credential to include persons with matriculation standing as well as those with all forms of vocational specialization. Thus, in part, the Census concept is similar to that employed by the Education, Science and Cultural Division of the Institutions and Public Finance Branch of Statistics Canada. The secondary school graduation count produced by the Education Division for each academic year from 1969-70 to 1974-75 is presented in Table I.

Table 1 Secondary School Graduates[1] by Province, 1969-70 to 1974-75

	1969-70	1970-71	1971-72	1972-73	1973-74	1974-75
Newfoundland	4,625	4,395	5,930	5,321	6,264	5,958
Prince Edward Island	1,125	1,145	1,159	1,135	1,093	1,308
Nova Scotia	3,005	6,485	8,025	7,745	7,610	7,320
New Brunswick	7,010	7,415	7,870	8,175	8,739	9,097
Quebec	37,775	58,673	56,350	59,928	66,521	78,204
Ontario[3]	81,831	87,196	90,335	91,705	91,851	94,255
Manitoba[4]	9,145	10,245	10,980	10,380	10,450	10,439
Saskatchewan	10,126	12,487	12,530	13,330	12,229	11,063
Alberta	17,500	18,151	19,011	19,688	19,357	19,560
British Columbia	19,280	20,920[2]	21,443[2]	21,156[2]	25,634[2]	27,090
Yukon and Northwest Territories	211	259[2]	299[2]	371[2]	377[2]	327
CANADA	191,633	227,371	233,932	238,934	250,125	264,621

[1] Grade 11 graduates in Newfoundland and grade 12 in other provinces.
[2] Estimate.
[3] Includes secondary school graduates of overseas schools.
[4] Until 1971-72 data are estimated.

Note: Fluctuations in data above may occur due to changes in definitions, and examination policies. Estimates of graduates from private schools are included where data were unavailable.

Source: Education Division, Statistics Canada.

One point of difference in the concept of the Secondary School Graduation Certificate as employed by the two surveys is the "grade level" element, i.e., the Education Division counts as graduates students who have completed Grade 12 in all provinces except Newfoundland where Grade 11 is accepted, while the Census makes no mention of grade level as an element in its concept. In view of this divergence, one might expect the Census count for this credential to be somewhat larger than the figure provide by the Education Division, where the Census includes graduates in the junior matriculation group or in vocational specialties with Grade 11 or lower standing.

1.2 Factors to Consider in Expanding the Concept

In the past, consideration has been given to an expanded presentation of secondary school education into sub-groups representative of types of courses such as regular or academic, commercial or business, trade, technological and other occupational (1968 Census Test, Toronto). At the time of the Toronto test however, the proposal was raised in the context of planning in the area of vocational training, and it was concluded that the secondary school sub-groups were not closely enough related to this type of education in the sense of leading directly to employment or a specific occupation. Nevertheless, this would not appear to discount the contribution to analysis that might be made available by this breakdown in the secondary school graduation certificate, especially in the case of the population for which this level of education is terminal. With this in mind, it may be helpful to observe some aspects of the secondary school programmes of studies across Canada to determine whether sub-groupings are feasible as a subject for Census inquiry.

Generally, for statistical purposes, secondary school graduates with the vocational specialty are defined as those who have spent at least one half of their school time in courses which the relevant provincial departments of education have indicated are in the vocational category. Thus, in determining whether a person may be described as being a vocational student, time spent in related subject areas must be considered at the discretion of the province and the individual.

In most provinces of Canada trade or vocational training is offered at commercial, technical and vocational high schools or at composite secondary schools which offer both academic and vocational type courses. Many secondary institutes also offer occupational programmes for students who have shown no particular aptitude for an academic education or for specialized training in a specific field. These occupational or pre-employment classes which are set up as part of the total programme in regular secondary schools, or which embrace the total programme of specially established schools are terminal in nature, and progress through the course is often registered by the "year in course" rather than by grade. The time required for the completion of a programme varies from one to three years, occasionally four years.

Beyond these common features, the provinces have taken different approaches to education of this kind. As a result, the varieties of systems and course terminologies as well as the divergent interpretations which may be placed on the amount of time students spend in vocational courses, especially in view of the amount of license allowed in categorizing academic subjects as related courses, has made it difficult to provide statistical data on a comparative basis from province to province.

Characteristic of the divergent approaches that the provinces have adopted to vocational training at the secondary school level is that presently operative in British Columbia where the curricula are planned basically to lead students into further learning. All of the programmes listed below, which apply to this province, may be considered as being vocationally oriented except(1).

(1) Academic-Technical program, the general purpose of which is to provide basic preparation for further education at university or an institute of technology;

(2) Commercial program, to provide basic preparation for either employment or further training in business and commerce;

(3) Industrial program, leading to employment in industry or to further technical training;

(4) Community Services program, leading to employment or further training in such occupations as practical nursing, food preparation and processing, child care, the provision of living accommodation, and other personal services;

(5) Visual and Preforming Arts program, leading to employment or further training in art, music, drama, and other related branches of the fine arts; and

(6) a group of programs, such as Agricultural, leading to employment or further training in the particular vocation studied.

In addition to these divergent approaches to vocational training at the secondary school level there are definite broad trends that should likely be taken into account when considering the statistical viability of sub-groupings for the secondary school graduate. In Nova Scotia and Newfoundland, for example, training traditionally given at the Vocational Secondary Schools has been transferred to the Regional Vocational Schools which operate outside of the framework of the secondary school system. In contrast, a reverse trend has occurred in Quebec Province where trade training, usually given at the provincial trade schools, has been transferred to the regional school boards for the purpose of integrating it into the secondary school system.

Despite these differences however, there have been attempts on the part of the provinces to establish broad common fields of specialty. In the event that these classifications may be of interest in the statistical development of secondary school graduate categories in future censuses, they are presented below.

(1) Agriculture and other primary industires. – Agriculture, fisheries, forestry and mining.

(2) Applies arts. – Commercial art, photography, graphic arts, printing, fashion arts, visual and performing arts, musical instrument repair, jewellery, broadcasting and journalism.

(3) Business and commerical. – Business administration, retailing and merchandising, typing, stenography, office practice and electronic data processing.

(4) Construction trades. – Architectural drafting, carpentry, pipe trades, towel trades, painting, air conditioning and refrigeration, heating and ventilation.

(5) Medical and community service. – Hospital services, nursing assistants, dental assistants, welfare and social work, sports and recreation and library assistants.

(6) Personal services. – Home economics (New Brunswick), barbering, hairdressing, beauty culture, dry cleaning, tailoring, dressmaking, sewing and design, shoe repairing, restaurant and food services.

(7) Other industrial and mechanical. – Machine shop, general mechanics and industrial drafting.

In view of the fact that in Canada about 45% of the adult population terminates education with no more than secondary schooling, it would appear that a breakdown at this level might be of interest in terms of its human capital investment to the economy. Two obvious classifications that come to mind are the senior matriculation group (university entrance) and the vocational specialty group. Because of the wide variations in the interpretation of vocational training among the provinces, as described in the preceding paragraphs, it could be difficult to design more detailed classifications that would be functional in a national survey such as the Census.

The Prospect for Analysis

It is not within the purview of this report to describe in detail the analytical research possibilities of education credentials in relation

to the wide range of socio-economic variables that are made available in the Census. Mention has already been made in the Introduction of the economic studies of having a more precise indicator of educational level in terms of completed programmes of study.

It should be noted, however, that the secondary school graduation certificate will open up avenues of reseach analysis within the field of education itself that appear to be needed. One of these studies would include the "drop-out" population which will be more clearly depicted in Census data because of the secondary school graducation certificate. A second would include the career patterns of secondary school graduates into the post-secondary non-university, university or labour force streams.

Figures of Tables 2, 3 and 4 should be observed with caution, and as approximations. However, they serve to suggest the directions that analytical studies may go as a result of the graduation statistic. Table 2 shows that of 474,860 presons between 16 and 17 years of age in 1971 358,467 or 82.4% were enrolled in Grade 12 or 13, and 76,393 or 17.6% were not enrolled. Thus, slightly more than eighty percent of the population in this age group is enrolled at this higher level of secondary schooling, the remainder having rejected full time school attendace at a lower grade level for various reasons.

Table 2 . Percentage of Total Population Between 16 and 17 Years of Age Attending Grades XII and XIII in 1970-71(1)

Area	Total Population 16-17 Yrs. of Age(2)		Population Attending Grades XII and XIII(3)		Population Not Attending Grades XII and XIII	
	Number	%	Number	%	Number	%
Canada	434,860	100.0	358,467	82.4	76,393	17.6

(1) Including Grade XI in Newfoundland.
(2) 1971 Census Catalogue 92-716.
(3) Educ/Sc/Cult Div.: Institutions and Public Finance Branch.

The figures of Table 3, showing graduates and enrollment for the 1970-71 academic year as provided by the Education Division of Statistics Canada, indicate that there is a high drop-out rate at this level of schooling. Of the total Grade 12 and 13 enrollment, 227,371 or 63.4% actually graduated, and the remaining 81,096 or 36.6% may be considered to be drop-outs at this higher level of secondary shool education. Thus, the

secondary school graduation statistics which will be provided in 1976 will enable users of census data to examine this population in terms of the various socio-economic characteristics.

Table 3 Percentage of Grade XII and Grade XIII Students Graduating 1970-71(1)

Area	Total in Grades XII and XIII(2)		Total Graduating(3)		Total Not Graduating	
	Number	%	Number	%	Number	%
Canada	358,467	100.0	227,371	63.4	81,096	36.6

(1) Including Grade XI in Newfoundland.
(2) Educ/Sc/Cult Division: Institutions and Public Finance Branch.

Table 4 shows the career streams of secondary school graduates. Of the total graduates in the 1970-71 academic year, 104,925 or 46.1% continued on to university, 90,365 or 39.7% to other post-secondary non-university type institutions, and 32,081 or 14.2% to the labour force. The socio-economic characteristics of each of these groups is of interest to educational reserachers. Again, it should be stated that the figures appearing in Tables 2, 3 and 4 must be used with caution, mainly because they represent a blending of statistics taken from two different surveys. However, they are not intended to reveal precise measurements, but only to suggest broad avenues of trends in which educational researchers are interested and which will be made available by the secondary school graduation certificate statistic in the 1976 Census.

Table 4 Percentage of Graduates at University, Post-Secondary Non-University and Not Attending School 1970-71

Areas	Total Graduates(1)		Total to University(2)		Total To P/S Non-University(3)		Total Not at School	
	Number	%	Number	%	Number	%	Number	%
Canada	227,371	100.0	104,925	46.1	90,365	39.7	32,081	14.2

(1) Educ/Sc/Cult Division: Institutions and Public Finance Branch.
(2) 1971 Census, Catalogue 92-764.
(3) 1971 Census, Unpublished Tables.

2. The Non-University Certificate or Diploma

2.1 The Census Concept

As shown in Figure I, the concept of the non-university certificate or diploma in the 1976 Census was adopted in the broad sense to include all certificates and diplomas awarded at any kind of educational institute other than degree-granting universities and colleges. If one considers this credential to be roughly equivalent to the "completed vocational course" concept employed in the 1971 Census he would expect to see approximately 1,076,467 persons with the non-university credential in the 1976 Census. Using the 1971 Census data to break the statistic down into four basic classifications, there were 69,727 or 6.5% with technological courses; 851,293 or 79,1% with trade, other vocational or occupational courses; 122,180 or 11.4% with the Nursing course, and 33,267 or 3.1% with the Teaching course (Table 5).

Table 5 Percentage Distribution of Non-University Courses by Broad Classifications, Canada, 1971

Course(1)	Number			Per Cent		
	Total	Male	Female	Total	Male	Female
Total	1,076,467	471,027	605,440	100.0	100.0	100.0
Technical	69,727	60,301	9,426	6.5	12.8	1.6
Trade	851,293	399,183	452,110	79.1	84.7	74.6
Nurse(2)	122,180	6,222	115,958	11.4	1.3	19.1
Teacher	33,267	5,321	27,946	3.1	1.1	4.6

(1) Does not include apprenticeship type training.
(2) Includes Nurses' Courses and Nurses' Assistants Courses.

A detailed description of the non-university credential in terms of these four basic categories is given below.

(1). The Post-Secondary Technical Diploma

The community colleges and technical institutes of most provincesoffer students with secondary school completion a wide selection of technical courses which are usually of two or three years' duration. Typical specialties and fields of study coming into this categoryare illustrated in Figure 2. (The listing is representative of programmes given at this level of post-secondary

Figure 2

Non-University Certificates and Diplomas at the Technological (Post Secondary) Level Given at Such Institutions as Community Colleges and Technical Institutes [1].

1. Accounting
2. Advanced secretarial
3. Agriculture
4. Animal health technology
5. Architectural technology
6. Biochemical technology
7. Bio-medical equipmement technology
8. Business administration
9. Business computer systems
10. Business secretarial
11. Cartography technology
12. Chemical engineering
13. Chemical technology
14. Child care
15. Civil engineering technology
16. Commercial art and design
17. Community planning
18. Dental technology
19. Drafting technology
20. Early childhood education
21. Educational resources technology
22. Electrical technology
23. Electronics technology
24. Engineering technology
25. From business management
26. Fashion marketing
27. Fashion technique and design
28. Food science technology
29. Forest research technology
30. Forest technology
31. Geological technology
32. Health inspectors
33. Heating technology
34. Heavy equipment (diesel)
35. Home economics
36. Hotel and resort administration
37. Industrial chemistry
38. Industrial chemistry technology
39. Industrial hydraulics
40. Industrial management
41. Industrial technology
42. Instrumentation technology
43. Interior design
44. Journalism
45. Journalism (advertising)
46. Journalism (news)
47. Laboratory technology
48. Law enforcement
49. Legal secretary
50. Library arts technology
51. Machine shop
52. Marine engineering cadet
53. Marketing
54. Mechanical drafting
55. Mechanical engineering
56. Mechanical technology
57. Medical secretarial
58. Metallurgical technology
59. Mining
60. Municipal administration
61. Navigation officer cadet
62. Nursing
63. Photographic arts
64. Plastic technician
65. Printing management
66. Radio and TV arts
67. Radiological technician
68. Retailing and Merchandising
69. Secretarial science
70. Special commercial
71. Textile technology
72. Technology (general)

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1. List is representative but not comprehensive.

education, but it is not comprehensive). Persons who have obtained the diploma for this type of training usually find employment at a semi-professional level between that of a university trained professional and a skilled tradesman.

It might be noted also that in addition to the community colleges and technical institutes there are, throughout Canada, a large number of related institutions that offer programmes of this calibre and intensity leading to the post-secondary non-university certificate and diploma such as junior colleges, colleges of Art, colleges of Agriculture, and specialized institutions such as the Nova Scotia Land Survey Institute. The figures of Table 6 show that in 1971, about twenty-five percent of the population that reported having completed vocational training had taken courses of two or more years in length a substatial part of which would, in all likelihood, have been in the technological classification.

(2). The Trade, Vocational and Occupational Cetificate

A largest amount of non-university type training leading to a certificate takes place in the trade or industrial divisions of community colleges and technical institutes, and in provincially operated district or regional trade schools, provincial vocational centres, combined agricultural and vocational schools, and in special schools devoted to providing trained manpower for specific industries or services such as forestry, fisheries, fire protection, marine operation and the petroleum industry. (While apprenticeship-type training is not included in the census concept for non-university certificates or diplomas, it may be helpful to note that many courses in the trade schools and related institutions are open to apprentices registered with a provincial department of Labour who take several weeks of "in class" training within their longer period of on-the-job training). Figure 3 illustrates typical specialties and fields of study for which certificates may be awarded in the area of trade, vocational and occupational training. The listing is representative of programmes given at this level of non-university education, but it is not comprehensive.

Most of the courses required to obtain these types of certificates require some high school education, usually at the Grade 11 level. For candidates who do not possess the required academic education, many vocational centres offer upgrading courses to prepare them for entry into a specific vocational course. These courses generally require one school year for completion although many especially those offered in adult vocational centres are completed in various periods of time of less than one years' duration. Table 6 shows that in 1971, about seventy-five percent of the population that reported having completed vocational training had taken courses of less than two years' duration most of which would, in all likelihood, have been in the trade, vocational and occupational categories.

Figure 3

Non-University Certificates and Diplomas Given at the Trade Schools and Vocational Centres [1].

1. Accounting (commercial)
2. Advertising
3. Appliance servicing
4. Art and sign writing
5. Basic training for skill development
6. Birch bark canoe building
7. Blue print reading
8. Building custodian
9. Building repair
10. Business machines and bookkeeping
11. Butcher and meat cutter
12. Carpenters (upgrading)
13. Carpet layer
14. Chef training
15. Clerk typist
16. Commercial clerical
17. Commercial dictating machine
18. Commercial refresher
19. Commercial vehicle
20. Computer programming
21. Cosmetology refresher
22. Dining room service
23. Drafting
24. Dressmaking and alterations
25. Drilling (air track)
26. Electric motor repair
27. Engineering drawing
28. Farming (business)
29. Fire department administration
30. Fire fighting prevention
31. Food supervisors (hospital)
32. Forestry
33. Furniture manufacturing(upholstered)
34. Furniture refinishing
35. Graphic arts
36. Heating technician
37. Heavy duty mechanic
38. Heavy equipment operator
39. Home makers
40. Industrial hydraulics
41. Instrumentation
42. Inventory control
43. Journalism (advertising)
44. Journalism (news writing)
45. Lathe operator
46. Layout cutting
47. Machine shop
48. Marine
49. Merchandising
50. Metal fabricating
51. Nurse's aid and orderly
52. Oil burner servicing
53. Optical lens making
54. Pattern design (garments)
55. Pilots (commercial)
56. Plumbers and fitters
57. Police and custodian guards
58. Power sewing
59. Printing (offset)
60. Quality control
61. Radio and TV servicing
62. Refrigeration
63. Secretary (medical)
64. Selling
65. Service station attendant
66. Sheet metal
67. Small engines
68. Toolmaking technician
69. Tourist guide
70. Varityping
71. Watchmaking
72. Welding

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1. List is representative but not comprehensive.

Table 6 Population with Other Vocational Training by Length of Course and Sex, Canada, 1971(1)

Sex	Total	Length of vocational course				
		3-5 months	6-12 months	1-2 years	2-3 years	3+ years
Total	843,877	112,614	335,067	176,956	136,233	83,007
Male	382,575	63,729	119,189	85,950	56,703	57,004
Female	461,302	48,885	215,878	91,006	79,530	26,003
Total	100.0	13.3	39.7	21.0	16.1	9.8
Male	100.0	16.6	31.1	22.5	14.8	14.9
Female	100.0	10.6	46.7	19.7	17.2	5.6

(1) Figures do not include apprenticeship training.

(3). The Nursing Diploma

Unitl recent years there have been two main types of institution offering secondary school graduates a diploma in Nursing, namely the universities and the "diploma" schools. The diploma schools of nursing offering the R.N. however, are no longer associated solely with the hospitals. The responsibility for the training of Nurses at this level is being assumed more and more by the community colleges, a trend which is well advanced particularly in the provinces of Quebec and Saskatchewan. In the 1971 Census, 148,450 or 7.5% of the population with completed vocational type training reported having courses in this category. However, because the classification included Nurses and Nursing Assistants, the percentage with the R.N. diploma would be considerably smaller.

(4). The Teaching Certificate

Until recent years, the elementary school teaching certificate had been awarded by the Departments of Education of most provinces, training being taken at approved institutions such as normal schools and teachers' colleges. Two exceptions to this type of organization have existed in the provinces of Newfoundland and Prince Edward Island where there have been no separate teacher training institutes, training being provided at the provincial universities.

Persently however, in most provinces the method of obtaining a teaching certificate has changed so that full time attendance in the faculty of education of one of the universities is required. As an example, in British Columbia, training is given at the University of British Columbia, and at Simon Fraser and Victoria Universities. At these institutions

training is provided for: (a) students who already hold a degree in any faculty; (b) students with Grade 12 standing and who will spend at least two years in residence in the faculty of education. Those who elect to remain for the full course of four or five years beyond Grade 12, proceed to a degree in education. (The B.Ed. requires four years of study beyond Grade 12 for the elementary qualification and five years for the secondary).

Thus, the recorganization of teachers' training into the university system, together with an increasing sense of professionalism on the part of teachers has made it very difficult to obtain a reliable count of this group in the vocational training category for statistical purposes. In the 1971 Census, for example, only 37,405 persons out of a total of 271,765 in the profession reported their training as being of the vocational type, even though for many it must have been obtained at the traditional institutions, i.e., the normal schools and teachers colleges.

2.2 The Prospects for Analysis

It is reasonable to assume that the non-university credential, which is closely related to occupational activity, will add somewhat to analytical research studies in the area of human resources. Again, it may be noted that the significance of this contribution to census educational data is underscored by the fact that in recent years economists have turned their attention to the role of human capital (education) in economic development as distinct from physical capital and are attempting to measure this investment in human capital, the social and private returns to such investment and the contribution of such investment to economic growth.

In addition, data obtained for the non-university credential in the 1976 Census will permit identification for analysis, that population which, for one reason or another, discontinued or dropped out of training to continue education at the university level or to enter the labour force.

3. The University Cetificate and Degrees

3.1 The Census Concepts

Bearing witness to the importance of higher education in Canada is the fact that today there are sixty-six degree granting institutions twenty-five of which are multifaculty organizations. Rapid growth over the decades may be attributed to such factors as the need for highly qualified manpower in our rapidly growing industrial society, the entry of the federal/provincial governments into university financing, the influx of special groups into the university stream such as the veteran population, and the increase of womens' participation in higher education in recent years. As a result, according to the 1971 Census, 483,840

or 3.6% of the total adult population of Canada had obtained the Bachelor or First Professional Degree; 136,435 or 1.0% the Masters/Doctorate Degree; and 231,145 or 1.7% the University Certificate or Diploma below the Bachelor level (Table 7).

Table 7 Population with University Credentials, Canada, 1971

Canada	Total Population(1)	Without Credential	University Credential			
			University Cert. or Dip	Bachelor	First Professional	Masters Doctorate
Total	13,168,025	12,316,600	231,143	321,069	162,772	136,436
Male	6,443,360	5,921,448	96,650	193,301	122,424	109,537
Female	6,724,660	6,395,152	134,493	127,768	40,348	26,899
Total	100.0	93.6	1.7	2.4	1.2	1.0
Male	100.0	91.9	1.5	3.0	1.9	1.7
Female	100.0	95.1	2.0	1.9	0.6	0.4

(1) Population 15 years of age and over no longer attending school.

Following the 1971 Census experience in which university credential were made a subject of inquiry for the first time, it was felt that basic revisions would be required for 1976. The first was made in response to the widespread need for separate categories for the Masters and Doctorate Degrees which had been combined in 1971. The second was made in response to the need for creating a minimal number of categories for degrees other than the Masters and Doctorate.

At this point it may be helpful to explain briefly the reason for this second revision. At the earliest stages of computer processing of 1971 Census educational data it was revealed that there had been excessively high reporting in the First Professional Degree category, because the concept had been misunderstood by many respondents, such as Teachers and Nurses who incorrectly classified their training as professional. (The problem was also identified in the Highly Qualified Manpower survey conducted in the post-censal period).

The final solution to this problem resulted in adopting the same broad classifications of degrees that had been employed by the Institutional and Financial Surveys Branch of Statistics Canada. Thus, for 1976, all types of Bachelor degrees (professional and non-professional) were grouped together, while the remainder of the First Professional Degrees which were neither Bachelor nor Masters made up the residual degree classification (M.D., D.D.S., D.M.D, or D.V.M.). A detailed explanation of the university credential concepts is presented below.

(1) The University Cetificate or Diploma (below Bachelor level)

The Census concept of this credential includes certificates and diplomas awarded by degree-granting institutions where the entry conditions to the course of study are similar to those for degree candidates. The University Cetificate or Diploma courses vary in length from one to three years. A Diploma course in Dairying, for example, continues for one year following senior matriculation; the Diploma course in Agriculture for two years; and Diploma courses in Occupational and Physical Therapy for three years. In the case of these latter two categories, some students continue studies at the university for an additional year in order to obtain the Bachelor of Occupational Therapy (B.O.C.) or the Bachelor of Physical Therapy (B.P.T) degrees. It should be noted that a wide selection of these undergraduate credentials are awarded through extension studies, and that the concept includes certificates and diplomas following a first degree but in a different field of study, such as the Diploma in Education following a general B.A. or B.Sc. degree. The full schedule of these types of programmes is given in Figure 4.

(2) The Bachelor Degree

In 1976 the Census concept adopted for this credential included all Bachelor degrees whether first professional or general. Thus, a Bachelor of Theology or a Bachelor of Education requiring a prior Bachelor of Arts or Bachelor of Science degree are included in this category. The general B.A. usually requires three years of study following senior matriculation, while Honours, Special or Canadian Studies programmes usually require four years following senior matriculation. A comprehensive list of all Bachelor degrees offered at Canadian universities is presented in Appendix A.

(3) The Medical or First Professional Degrees (neither Bachelor) nor Masters

(a) Doctor of Medicine (M.D.) This course generally requires four years of study in the faculty of medicine beyond two years of pre-medicine or science.

(b) Doctor of Dental Surgery (D.D.S.) This course generally requires four years of study in the faculty of dentistry beyond one year of science.

Figure 4

University Certificates and Diplomas (below Bachelor level)

Education

Teaching fields:
- Arts and fine arts education
- Education (general)
- Exceptional children
- Music education
- Nursery and kindergarten education
- Physical health education and recreation
- Elementary education

Non-teaching fields:
- Educational psychology

Fine and applied arts
- Theory (history, appreciation of art, music, etc.).
- Fine arts
- Graphic design

Music:
- Concert diploma
- Music
- Piano
- Sacred music

Humanities and related

Arts (not classified by specialization):
- Geography
- Philosophy

Library and record science:
- Library technology

Mass media studies:
- Journalism

Religious studies:

Theology:
- Biblical studies
- Canon law
- Church manship
- Missionary studies
- Pastoral theology
- Theology (general)
- Testamur

Religious education

Education

Teaching fields:
- Education (unclassified)
- Secondary education:
  - Following degree
- Teaching ability certificates:
  - Emotionally and physically handicapped
  - Physical education
  - Music education
  - Second language
  - Catechism
  - Postoral studies

Non-teaching fields:
- Counselling and guidance
- Audiovisual techniques

Fine and applied arts

Music:
- Music
- Choral music

Humanities and related

Library and records science:
- Archive maintenance

Modern languages and literature:
- French
- German
- Russian
- Spanish

Religious studies:
- Theology
- Pastoral studies

Translation

Social sciences and related

Commerce and business administration:
- Banking
- Accounting
- Data processing
- Business administration
  - Export promotion
  - Personnel administration
  - Hospital administration

Political science:
- Public administration
  - Public service studies
  - Municipal administration
  - Local government administration

Criminology

Social work:
- Alcoholism and other intoxicating substances

Engineering and applied sciences

Engineering:
- Engineering (general)
- Electrical
- Mechanical

Forestry:
- Environmental forestry
- Logging technique

Health professions and occupations

Medical technology and medical laboratory technology:
- Clinical laboratory technology
- Cytotechnology

Nursing:
- Nursing education
- Nursing teaching and supervision
- Public health nursing

Social sciences and related

Commerce, business administration:
- Administration
- International business management
- Nursing service administration
- Business data systems
- Accounting
- Medical secretaryship
- Secretarial science (general)

Man/Environment studies:
- Social leadership

Political science:
- Public administration
- International Cooperation

Psychology:
- Clinical behavioural science

Social work

Social communications

Agricultural and biological sciences
- Agriculture

Engineering and applied sciences

Engineering:
- Engineering (general)
- Surveying engineering

Technology:
- Engineering technology
- Forest technology

Health professions and occupations

Nursing:
- Outpost nursing
- Psychiatric nursing
- Public health nursing
- Teaching in school of nursing

Rehabilitation medicine:
- Occupational therapy
- Occupational and physical therapy
- Physiotherapy

Public health

Dental hygiene

Medical technology

Laboratory technology

(c) Doctor of Dental Medicine (D.M.D.) This course generally requires four or five years of study in the faculty of dentistry beyond one year of science.

(d) Doctor of Veterinary Medicine (D.V.M.) This course generally requires four years of study in the faculty of veterinary medicine beyond two years in science.

(4) The Masters Degree

The census concept of this credential includes all Masters degrees as well as those in the first professional class such as the Master of Social Work (M.S.W.) and the Master of Library Science (M.L.S.). The Masters degree usually requires two years of study in the appropriate faculty following a general B.A. or one year following an honours B.A. It should be noted that the Licenses which follow a Bachelor degree in the same field of study are considered equivalent to a Masters. A comprehensive list of all Masters degrees offered at Canadian degree-granting institutions is shown in Appendix B.

The University Licence

LLL
Licence en droit

LLM
Maîtrise en droit
Master of laws

LMus
Licentiate in music

LMusWesternBoard
Licentiate in music

LPh
Licence en philosophie
Licentiate in philosophy

LScCompt
Licence en sciences comptables

LScO
Licence en optométrie

JCL
Licentiate in canon law

LDC
Licence en droit canonique

LicDipMus
Licentiate diploma in music

LLB
Baccalauréat en droit
Bachelor of laws

LT(Cert)
Certificate in hospital laboratory technology

LTh
Licence en théologie
Licentiate in theology

(5) The Doctorate Degree

The Census concept of this credential includes only earned Doctorates. The Doctorate generally requires two years of study following the Masters or three years following the honours B.A. A comprehensive list of all Doctorate degrees offered at Canadian degree-granting institutions is presented below.

The University Doctorate Degree

PhD
Doctorat
Doctorat en éducation
Doctorat en philosophie
Doctorat ès sciences appliquées
Doctor of philosophy
Doctor of philosophy in agriculture
Doctor of philosophy in engineering
Doctor of philosophy in forestry
Doctor of philosophy in human nutrition
Doctor of philosophy in medicine
Doctor of philosophy in musicology
Doctor of philosophy in theology

DMus
Doctorat en musique

DPh
Doctorat en philosophie
Doctor of philosophy

DPs
Doctorat en psychologie

DPsy
Doctorat en psychologie

Doctor of philosophy in veterinary medicine
Doctor of philosophy (medical science)

DSc
Doctorat ès sciences
Doctor of science

DScA
Doctorat ès sciences appliquées

DScAdm
Doctorat en sciences de l'administration

DScEd
Doctorat en sciences sociales

DSc(énergie)
Doctorat ès sciences (énergie)

DScH
Doctorat ès sciences en hygiène

DSW
Doctor of social work

DTh
Doctorat en théologie
Doctor of theology

DTh(Miss)
Doctor in theology in missiology

DTh/ScMiss
Doctorat en théologie en sciences missionnaires

EdD
Doctor of education

JCD
Doctorat en droit canonique
Doctor in canon law

LLD
Doctorat en droit

Philosophiae doctor
Philosophiae doctor en aménagement
Philosophiae doctor en sciences de l'éducation

PhD(CL)
Doctor of philosophy in canon law

PhD(DC)
Doctorat en philosophie en droit canonique

PhD(Ph)
Philosophiae doctor (philosophie)

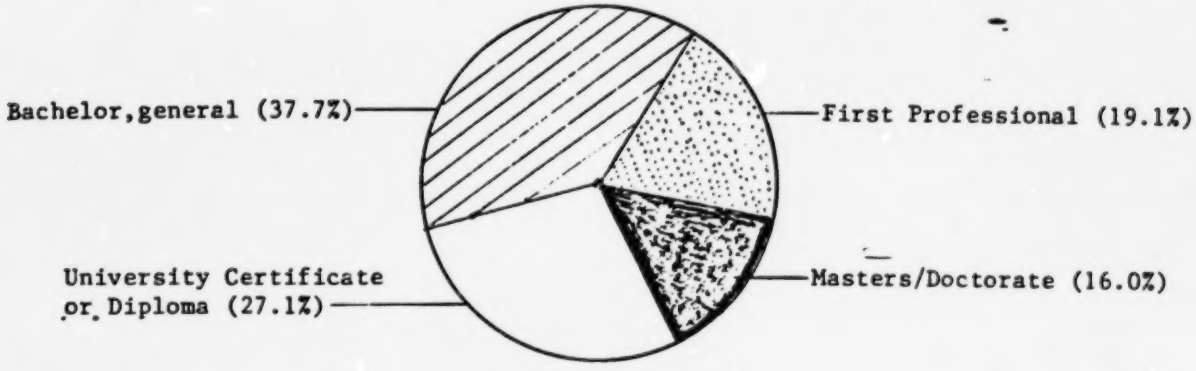
PhD(Ps)
Philosophiae doctor en psychologie

PhD(sciences médiévales)
Philosophiae doctor en sciences médiévales

PhD(Th)
Doctorat en philosophie en théologie
Doctor of philosophy in theology

Figure 5

Population with University Credentials, Canada, 1971



3.2 The Prospect for Analysis

The university credential, which is related to occupations in the professional category should be of some value to economists who, in recent years, have tended to intensify their interest in human capital. In terms of the broad classifications which will be provided by the 1976 Census, trained medical personnel may prove to be a useful statistic. However, the grouping together of the general Bachelor with all first professional Bachelor degrees will arrest the possibility of comparing non-professional with professional credentials at the university level which is considered to be of considerable importance to educational analysts and economists.

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4. Recommendations for Future Censuses

The Secondary School Graduation Certificate

4.1 The analytical research potential of this statistic would be improved by a break-down of the credential into two basic classifications: (1) senior matriculation (university entrance standing); and (2) other vocational specialty. Should a further sub-grouping of the vocational specialty be desired, those which have been recommended by the provinces could be considered (1.1).

The Non-University Certificate or Diploma

4.2 If this credential is retained as a subject of Census inquiry, there are four broad groupings which could enhance its potential for analytical research, i.e., (1) technological; (2) trade, other vocational and occupational; (3) Teachers training; (4) Nurses training (2.1).

The University Certificate, Diploma or Degree

4.3 In view of the benefits to analysis of obtaining the higher level degrees, i.e., the Masters and the Doctorate (even without field of specialty), it would appear that these credentials should be retained in future Censuses. However, if one accepts the idea that a break-down of the large residual classification (all other degrees) is necessary, it would seem that a sub-grouping of Bachelor degrees into the professional and non-professional categories would be of more value to analysis than the present procedure in which all Bachelors are grouped together and the medical faculty degrees form a second classification. The medical degrees are of such a mix as to be of limited assistance in analysis, while a break-down of Bachelors would provide a comparison of professional and non-professional type qualifications at the university level which is in demand (4.2).

5. Conclusions

The Secondary School Graduation Certificate

5.1 Educational researchers may be the chief beneficiaries of this statistic in terms of obtaining analytical material for the secondary school drop-out population (1.1).

5.2 Limited benefits related to the economist's interest in "human capital" may result from obtaining this statistic, although they would likely increase substantially if sub-groupings were established (1.1, 4.1).

5.3 Because of the adoption by the Census of the broad interpretation of the secondary school graduate (grade level excluded), the statistic may well be expected to include senior matriculation and vocational specialties at the Grade 12 and 13 levels, as well as some below this grade level particularly in special classes and schools. It may, or may not, include those who have obtained the graduate equivalent through "upgrading" courses by community colleges, trade schools and other vocationally-oriented institutions (1.1, 4.1).

The Non-University Certificate or Diploma

5.4 In its present interpretation, the Census concept of this credential will include hundreds of different programmes ranging from the basis Occupational specialties to the advanced Technological, Teaching and Nursing qualifications (2.1). Because of this, the statistic may be of very limited value in considering it from the economist's point of view, i.e., its human capital investment in the economy (2.1, 4.2). A break-down of this credential into the four broad classifications noted in 2.1 and 4.2 could substantially increase the analytical potential of this statistic.

5.5 Educational researchers may benefit in having analytical material available for the non-university level drop-out population (2.2).

The University Certificates, Diplomas and Degrees

5.6 The chief benefit that researchers will obtain from this credential will be, in all likelihood, the break-down of the higher degree category into the Masters and the Doctorate degrees. Prospects for analytical research will be significantly limited, however, by not having the fields of specialty within these broad categories (3.1, 3.2).

5.7 The grouping of all Bachelors together may be considered a loss from the standpoint of educational researchers who are interested in variations in professional and non-professional credentials at the university level (3.1, 3.2, 4.3).

5.8 The grouping of the medical faculty classifications together as a separate group may be of some limited analytical value (3.1, 3.2, 4.3).

5.9 The University Certificate or Diploma classification may be some analytical value, although it would be greatly enhanced if the fields of specialty were made available (3.1).

Appendix A

Bachelor Degrees

BA
Baccalauréat en musique
Baccalauréat ès arts
Baccalauréat ès arts spécialisé en études allemandes
Baccalauréat ès arts spécialisé en études anciennes
Baccalauréat ès arts spécialisé en études anglaises
Baccalauréat ès arts spécialisé en études françaises et baccalauréat ès arts spécialisé en français pour non-francophones
Baccalauréat ès arts spécialisé en géographie
Baccalauréat ès arts spécialisé en histoire de l'art
Baccalauréat ès arts spécialisé en linguistique
Baccalauréat ès arts spécialisé en traduction
Baccalauréat spécialisé en études hispaniques
Baccalauréat spécialisé en histoire
Bachelier ès arts
Bachelor of arts
Bachelor of arts and science
Bachelor of arts in history in art
Bachelor of arts with honors in public administration
Bachelor of arts with major in music

BAA
Baccalauréat en administration des affaires

BA(Admin)
Bachelor of arts (administration)

BAA(Early Childhood Education)
Bachelor of applied arts in early childhood education

BAA(Geography)
Bachelor of applied arts in geography

BAA(Home Economics)
Bachelor of applied arts in home economics

BAA(Interior Design)
Bachelor of applied arts in interior design

BAA(Journalism)
Bachelor of applied arts in journalism

BAA(Photography)
Bachelor of applied arts in photography

BAA(Radio and Television Arts)
Bachelor of applied arts in radio and television arts

BAA(Secretarial Science)
Bachelor of applied arts in secretarial science

BAA(Social Services)
Bachelor of applied arts in social services

BAA(Urban Planning)
Bachelor of applied arts in urban planning

BA/BEd
Combined bachelor of arts and bachelor of education

BA/BPHE
Combined bachelor of arts and bachelor of physical health education

BA/BSW
Combined bachelor of arts and bachelor of social work

BA(Canadian Studies)
Bachelor of arts in Canadian Studies

BAdm
Baccalauréat général en administration
Bachelor of administration

BAdmin
Bachelor of administration

BAE
Bachelor of art education

BA(Ed)
Bachelor of arts (education)

BA(LPh)
Bachelier ès arts mention latin-philosophie

BA(Mus)
Bachelor of arts (major in music)

BAP
Baccalauréat en architecture paysagiste

BA(Ph)
Baccalauréat ès arts avec mention en philosophie

BArch
Baccalauréat en architecture
Bachelor of architecture

BA(Recreation)
Bachelor of arts (recreation)

BArtsvis
Baccalauréat en arts visuels

BASc
Bachelor of applied science

BAwithSecretarialCertificate
Bachelor of arts with secretarial certificate

BBA
Bachelor of business administration

BCat
Baccalauréat en catéchèse

Appendix A

Bachelor Degrees (cont'd)

BCL
Bachelor of canon law
Bachelor of civil law

BCom
Baccalauréat en commerce
Bachelor of commerce

BComm
Bachelor of commerce

BCompSc
Bachelor of computer science

BCom(Sports administration)
Bachelor of commerce in sports administration

BCS
Bachelor of computer science

BD
Bachelor of divinity

BDC
Baccalauréat en droit canonique

BDes
Bachelor of design

BDI
Baccalauréat en design industriel

BE
Bachelor of science in engineering

BEd
Baccalauréat en éducation
Baccalauréat en éducation (enseignement aux inadaptés)
Baccalauréat en éducation (enseignement élémentaire)
Baccalauréat en éducation (enseignement secondaire)
Baccalauréat en éducation spéciale
Bachelor of education

BEdPhy
Baccalauréat en éducation-physique

BEE
Baccalauréat d'enseignement élémentaire
Baccalauréat en enseignement élémentaire

BEng
Bachelor of engineering

BEngM
Bachelor of engineering and management

BEnsEnflnad
Baccalauréat en enseignement

BEP
Baccalauréat en études pastorales

BEPH
Baccalauréat en éducation physique et hygiène

BES
Bachelor of environmental studies

BESc
Bachelor of engineering science

BFA
Bachelor of fine arts

BGS
Bachelor of general studies

BHD
Baccalauréat en hygiène dentaire

BHE
Bachelor of home economics

BHEc
Bachelor of home economics

BHRS
Bachelor of health record science

BID
Bachelor of industrial design
Bachelor of interior design

BIS
Bachelor of independent studies

BJ
Bachelor of journalism

BLA
Bachelor of landscape architecture

BLArch
Bachelor of landscape architecture

BLaws
Bachelor of laws

BLS
Bachelor of library science

BLT
Bachelor of laboratory technology

BM
Baccalauréat en musique

BMA
Bachelor of musical arts

Appendix A

Bachelor Degrees (cont'd)

BMath
Bachelor of mathematics

BMedSc
Bachelor of medical science

BMin
Bachelor of ministry

BMus
Baccalauréat en musique
Baccalauréat en musique avec spécialisation
Bachelor of music

BMusA
Bachelor of musical arts

BMusEd
Bachelor of music education

BMus(Perf)
Bachelor of music performance

BN
Bachelor of nursing

BNSc
Bachelor of nursing science

BOT
Bachelor of occupational therapy

BPE
Bachelor of physical education

BPh
Baccalauréat en philosophie
Bachelor of philosophy

BPharm
Baccalauréat en pharmacie

BPHE
Bachelor of physical and health education

BPs
Baccalauréat en psychologie

BPsy
Baccalauréat en psychologie

BPT
Bachelor of physical therapy

BRE
Bachelor of recreation education

BRelS
Bachelor of religious studies

BSA
Bachelor of science in agriculture
Bachelor of secretarial administration
Bachelor of secretarial arts

BSc
Baccalauréat ès sciences
Bachelor of science
Bachelor of science (applied)
Bachelor of science in agriculture
Bachelor of science in engineering
Bachelor of science in forestry
Bachelor of science in home economics
Bachelor of science in nursing
Bachelor of science in nursing for registered nurses
Bachelor of science in occupational therapy
Bachelor of science in pharmacy
Bachelor of science in physical therapy
Bachelor of science in speech pathology and audiology

BScA
Baccalauréat ès sciences appliquées
Baccalauréat ès sciences appliquées et diplôme d'ingénieur

BSc(AAM)
Bachelor of science (art as applied to medicine)

BScact
Baccalauréat ès sciences de l'actuariat

BScadm
Baccalauréat en science de l'administration

BSc(AE)
Bachelor of science in agricultural engineering

BSc(Agr)
Bachelor of science in agriculture

BSc(AgrEng)
Bachelor of science in agricultural engineering

BSc(Arch)
Bachelor of science (architecture)

BSc/BEd
Combined bachelor of science and bachelor of education

BSc(CD)
Bachelor of science in medical rehabilitation (communication disorders)

BSc(CE)
Bachelor of science in civil engineering

BScCS
Bachelor of science in computer science

Appendix A

Bachelor Degrees (cont'd)

BScD
Bachelor of science in dentistry

BScD(Anaes)
Bachelor of science in dentistry (anaesthesiology)

BSc(DipEng)
Bachelor of science with a diploma in engineering

BScDom
Baccalauréat en sciences domestiques

BSc(E)
Bachelor of science in engineering

BScEd
Baccalauréat ès sciences de l'éducation
Bachelor of science in education

BSc(Edphys)
Baccalauréat ès sciences (éducation physique)

BSc(EducPrésEnsElém)
Baccalauréat ès sciences (éducation préscolaire et enseignement élémentaire)

BSc(EE)
Bachelor of science in electrical engineering

BSc(Eng)
Bachelor of science in engineering

BSc(Engin)
Bachelor of science for engineering

BSc(EngMgt)
Bachelor of science in engineering management

BSc(Eng-Phy)
Bachelor of science in engineering physics

BSc(erg)
Baccalauréat ès sciences (ergothérapie)

BScF
Bachelor of science in forestry

BSc(FdSc)
Bachelor of science in food science

BScFE
Bachelor of science in forest engineering

BSc(FoodSci)
Bachelor of science in food science

BSc(FSc)
Bachelor of science in food science

BSc(GE)
Bachelor of science in geological engineering

BSc(HE)
Bachelor of science (home economics)

BScHEc
Bachelor of science in home economics

BSc(HEc)
Bachelor of science in household economics

BSc(HK)
Bachelor of science in human kinetics

BSc(Inf)
Baccalauréat en sciences infirmières

BSc(Kinesiology)
Bachelor of science in kinesiology

BSc(ME)
Bachelor of science in mechanical engineering

BSc(Med)
Bachelor of science in medicine

BSc(MLS)
Bachelor of science in medical laboratory science

BSc(MLT)
Degree in medical laboratory technology

BScN
Baccalauréat en sciences infirmières
Bachelor of science in nursing

BSc(N)
Bachelor of science in nursing

BSc(Nurs)
Baccalauréat ès sciences (nursing)

BSc(nut)
Baccalauréat ès sciences (nutrition)

BSc(OccTher)
Bachelor of science in occupational therapy

BSc(ortho)
Baccalauréat ès sciences (orthopédagogie)

BSc(orthoetaudio)
Baccalauréat ès sciences (orthophonie et audiologie)

BSc(OT)
Bachelor of science in medical rehabilitation (occupational therapy)
Bachelor of science in occupational therapy

BSc(Pharm)
Bachelor of science in pharmacy

Appendix A

Bachelor Degrees (cont'd)

BSc(phm)
Baccalauréat ès sciences (pharmacie)

BScPhm
Bachelor of science in pharmacy

BScPhysEd
Bachelor of science in physical education

BSc(physio)
Baccalauréat ès sciences (physiothérapie)

BSc(PhysTher)
Bachelor of science in physical therapy

BSc(Ps)
Baccalauréat ès sciences (psychologie)

BSc(pséd)
Baccalauréat ès sciences (psychoéducation)

BSc(PT)
Bachelor of science in medical rehabilitation (physical therapy)
Bachelor of science in physical therapy

BSc(santé)
Baccalauréat ès sciences de la santé

BScsoc
Baccalauréat en sciences sociales

BSectA
Bachelor of secretarial arts

BServsoc
Baccalauréat en service social

BSF
Bachelor of science in forestry

BSHEc
Bachelor of science in home economics

BSL
Baccalauréat en sciences du langage
Bachelor of science in language

BSN
Bachelor of science in nursing

BSP
Bachelor of science in pharmacy

BSpAdm
Baccalauréat spécialisé en administration

BSpAdm(recherche opérationnelle)
Baccalauréat spécialisé en administration (recherche opérationnelle)

BSpAdm(sciences comptables)
Baccalauréat spécialisé en administration (sciences comptables)

BSpAnCult
Baccalauréat spécialisé en animation culturelle

BSpArtDr
Baccalauréat spécialisé en art dramatique

BSpArtsPl
Baccalauréat spécialisé en arts plastiques

BSpDesign(2D)
Baccalauréat spécialisé en design (2D)

BSpDesign(3D)
Baccalauréat spécialisé en design (3D)

BSPE
Bachelor of science in physical education

BSpEc
Baccalauréat spécialisé en économique

BSpEdCult
Baccalauréat spécialisé en éducation culturelle

BSpEdPhy
Baccalauréat spécialisé en éducation physique

BSpEnfInad
Baccalauréat spécialisé en enfance inadaptée

BSpEnsArtsPl
Baccalauréat spécialisé d'enseignement (arts plastiques)

BSpEnsEl
Baccalauréat spécialisé d'enseignement élémentaire

BSpEns(enfance inadaptée)
Baccalauréat spécialisé d'enseignement (enfance inadaptée)

BSpEns(musique)
Baccalauréat spécialisé d'enseignement (musique)

BSpEnsPrésc
Baccalauréat spécialisé d'enseignement préscolaire

BSpEnsProf(électrotechnique)
Baccalauréat spécialisé d'enseignement professionnel (électrotechnique)

Appendix A

Bachelor Degrees (cont'd)

BSpEnsProfSec
Baccalauréat spécialisé d'enseignement professionnel secondaire

BSpEnsProf(techniques de la mécanique)
Baccalauréat spécialisé d'enseignement professionnel (techniques de la mécanique)

BSpEnsSec(administration)
Baccalauréat spécialisé d'enseignement secondaire (administration)

BSpEnsSec(art dr)
Baccalauréat spécialisé en enseignement secondaire (art dramatique)

BSpEnsSec(biologie)
Baccalauréat spécialisé d'enseignement secondaire (biologie)

BSpEnsSec(études anglaises)
Baccalauréat spécialisé d'enseignement secondaire (études anglaises)

BSpEnsSec(études françaises)
Baccalauréat spécialisé d'enseignement secondaire (études françaises)

BSpEnsSec(géographie)
Baccalauréat spécialisé d'enseignement secondaire (géographie)

BSpEnsSec(histoire)
Baccalauréat spécialisé d'enseignement secondaire (histoire)

BSpEnsSec(mathématiques)
Baccalauréat spécialisé d'enseignement secondaire (mathématiques)

BSpEnsSec(physique)
Baccalauréat spécialisé d'enseignement secondaire (physique)

BSpEnsSec(sciences religieuses)
Baccalauréat spécialisé d'enseignement secondaire (sciences religieuses)

BSpEns(sexologie)
Baccalauréat spécialisé d'enseignement (sexologie)

BSpEnsTech
Baccalauréat spécialisé d'enseignement technique

BSpEtAng
Baccalauréat spécialisé en études anglaises

BSpGénagogie
Baccalauréat spécialisé en génagogie

BSpGéog
Baccalauréat spécialisé en géographie

BSpGéoPhy
Baccalauréat spécialisé en géographie physique

BSpH
Baccalauréat spécialisé en histoire

BSpHistdel'art
Baccalauréat spécialisé en histoire de l'art

BSpInfCult
Baccalauréat spécialisé en information culturelle

BSpInformScoletProf
Baccalauréat spécialisé en information scolaire et professionnelle

BSpLCl(études anciennes)
Baccalauréat spécialisé en lettres classiques (études anciennes)

BSpLet(étFr)
Baccalauréat spécialisé en lettres (études françaises)

BSpLet(études françaises-géographie)
Baccalauréat spécialisé en lettres (études françaises-géographie)

BSpLet(études françaises-histoire)
Baccalauréat spécialisé en lettres (études françaises-histoire)

BSpLing
Baccalauréat spécialisé en linguistique

BSpLitQué
Baccalauréat spécialisé en littérature québécoise

BSpMathématiques
Baccalauréat spécialisé en mathématiques

BSpMus
Baccalauréat spécialisé en musique

BSpPh
Baccalauréat spécialisé en philosophie

BSpPhy-Chi
Baccalauréat spécialisé en physico-chimie

BSpPsy
Baccalauréat spécialisé en psychologie

BSpRecherCult
Baccalauréat spécialisé en recherche culturelle

BSpRécréol
Baccalauréat spécialisé en récréologie

BSpRécréologie
Baccalauréat spécialisé en récréologie

Appendix A

Bachelor Degrees (cont'd)

BSpRelHum
Baccalauréat spécialisé en relations humaines

BSpScA(génie électrique)
Baccalauréat spécialisé en sciences appliquées (génie électrique)

BSpScA(génie géologique)
Baccalauréat spécialisé en sciences appliquées (génie géologique)

BSpScA(génie industriel)
Baccalauréat spécialisé en sciences appliquées (génie industriel)

BSpScA(génie unifié)
Baccalauréat spécialisé en sciences appliquées (génie unifié)

BSpSc(biochimie)
Baccalauréat spécialisé en sciences (biochimie)

BSpSc(biologie)
Baccalauréat spécialisé en sciences (biologie)

BSpSc(biophysique)
Baccalauréat spécialisé en sciences (biophysique)

BSpSc(chimie)
Baccalauréat spécialisé en sciences (chimie)

BSpScEd
Baccalauréat spécialisé en sciences de l'éducation

BSpSc(géologie)
Baccalauréat spécialisé en sciences (géologie)

BSpScJuridiques
Baccalauréat spécialisé en sciences juridiques

BSpSc(mathématiques)
Baccalauréat spécialisé en sciences (mathématiques)

BSpSc(physique)
Baccalauréat spécialisé en sciences (physique)

BSpScPol
Baccalauréat spécialisé en science politique

BSpScRel
Baccalauréat spécialisé en sciences religieuses

BSpScSanté(nursing)
Baccalauréat spécialisé en sciences de la santé (nursing)

BSpSoc
Baccalauréat spécialisé en sociologie

BSpTh
Baccalauréat spécialisé en théologie

BSpTravSoc
Baccalauréat spécialisé en travail social

BSR
Bachelor of science in rehabilitation

BSSoc
Baccalauréat en service social

BSW
Baccalauréat en service social
Bachelor of social welfare
Bachelor of social work

BT
Bachelor of teaching

BTech(Architectural Science)
Bachelor of technology in architectural technology

BTech(Business Management)
Bachelor of technology in business management

BTech(Chemical)
Bachelor of technology in chemical technology

BTech(Construction Management)
Bachelor of technology in construction management

BTech(Electrical)
Bachelor of technology in electrical technology

BTech(Geodetic Sciences)
Bachelor of technology in geodetic sciences

BTech(Industrial Engineering)
Bachelor of technology in industrial engineering

BTech(Laboratory Science)
Bachelor of technology in laboratory science

BTech(Mechanical Engineering)
Bachelor of technology in mechanical engineering

BTh
Baccalauréat en théologie
Bachelor of theology

BThPast
Baccalauréat en théologie pastorale

BTrad
Baccalauréat en traduction

Appendix B

Masters Degrees

MA
Maîtrise ès arts

Maîtrise ès arts en musique
Master of arts
Master of arts in education
Master of arts in history
Master of arts in musicology
Master of arts in philosophy
Master of arts in public administration
Master of arts in theology

MA(CL)
Master of arts in canon law

MA(DC)
Maîtrise ès arts en droit canonique

MA(Ed)
Maîtrise ès arts en éducation
Master of arts in education

MA(Education)
Master of arts (education)

MA(ens)
Maîtrise ès arts (enseignement)

MA(études littéraires)
Maîtrise ès arts (études littéraires)

MAg
Master of agriculture

MA(histoire)
Maîtrise ès arts (histoire)

MAinEducation
Master of arts in education

MAinTeaching
Master of arts in teaching

MA(lettres)
Maîtrise ès arts (lettres)

MA(linguistique)
Maîtrise ès arts (linguistique)

MAm(Arch)
Maîtrise en aménagement

MA(Miss)
Master of arts in missiology

MAP
Maîtrise en administration publique

MA(Ph)
Maîtrise ès arts en philosophie

MA(philosophie)
Maîtrise ès arts (philosophie)

MA(Ps)
Maîtrise ès arts en psychologie

MA(psychologie)
Maîtrise ès arts (psychologie)

MArch
Maîtrise en architecture
Master of architecture

MAS
Maîtrise en administration des sciences de la santé

MASc
Master of applied science

MA(science politique)
Maîtrise ès arts (science politique)

MA(sciences médiévales)
Maîtrise ès arts en sciences médiévales

MA(sciences religieuses)
Maîtrise ès arts (sciences religieuses)

MA(ScMiss)
Maîtrise ès arts en sciences missionnaires

MA(sociologie)
Maîtrise ès arts (sociologie)

M(ATDR)
Maîtrise avec mention aménagement du territoire développement régional

MA(Th)
Maîtrise ès arts en théologie
Master of arts in theology

MA(théologie)
Maîtrise ès arts (théologie)

MBA
Maîtrise en administration
Maîtrise en administration des affaires
Maîtrise en gestion des affaires
Master of business administration

Appendix B

Masters Degrees (cont'd)

MBA/LLB
Combined master of business administration and bachelor of laws

MBibl
Maîtrise en bibliothéconomie

MCEd
Master of continuing education

MCL
Master of canon law
Master of civil law

MCISc
Master of clinical science

MCom
Master of commerce

MCompSc
Master of computer science

MCP
Master of city planning

MDC
Maîtrise en droit canonique

MD,CM
Doctor of medicine and master of surgery

MDiv
Master of divinity

MDroit
Maîtrise en droit

MEd
Maîtrise en éducation
Master of education
Master of education in educational administration

MEdAdmScol
Maîtrise en éducation option administration scolaire

MEDes
Master of environmental design

MEdPhys
Maîtrise en éducation physique

MEng
Master of engineering

MEng(Mining)
Master of engineering (mining)

MER
Maîtrise en éducation religieuse

MES
Master in environmental studies

MESc
Master of engineering science

MF
Master of forestry

MFA
Master of fine arts

MFisc
Maîtrise en fiscalité

Mgénie(biomédical)
Maîtrise en génie biomédical

MHP
Master of hospital pharmacy

MHSA
Master of health services administration

MHSc
Master of health science

MInfScolProf
Maîtrise en information scolaire et professionnelle

MIng
Maîtrise en ingénierie

MLA
Master of landscape architecture

MLS
Master of library science
Master of library service

MMA
Master of musical arts

MMath
Master of mathematics

MMus
Maîtrise en musique
Master of music

MMuseol
Master of museology

MNRM
Master of natural resources management

Appendix B

Masters Degrees (cont'd)

MN(Teaching)
Master of nursing (teaching)

MNurs
Maîtrise en nursing

MOA
Maîtrise en orthophonie et audiologie

M(Orthodontie)
Maîtrise en orthodontie

MPA
Master of public administration

MPE
Master of physical education

MPh
Maîtrise en philosophie

MPhil
Master of philosophy

MPM
Master of pest management

Mprofpast
Maîtrise professionnelle en pastorale

MPs
Maîtrise en psychologie
Master of psychology

MPséd
Maîtrise en psychoéducation

MPsy
Maîtrise en psychologie

MRE
Master of religious education

MS
Master of surgery

MSc
Maîtrise ès sciences
Master of science
Master of science in agriculture
Master of science in astronomy
Master of science in business administration
Master of science in commerce
Master of science in engineering
Master of science in forestry
Master of science in medicine
Master of science in oral surgery
Master of science in pharmacy
Master of science in physical education
Master of science in restorative dentistry and prosthodontics
Master of science in veterinary medicine
Master of science (medical science)

MScA
Maîtrise ès sciences appliquées

MScA(électrothermique)
Maîtrise en sciences appliquées (électrothermique)

MSc(Appl)
Master of science (applied)

MSc(biologie)
Maîtrise ès sciences (biologie)

MSc(biologie dentaire)
Maîtrise en biologie dentaire

MSc(chimie)
Maîtrise ès sciences (chimie)

MSc(com)
Maîtrise ès sciences en communication

MScCS
Master of science in computer science

MScD
Master of science in dentistry

MScE
Master of science in engineering

MSc(eau)
Maîtrise ès sciences (eau)

MSc(écologie)
Maîtrise ès sciences (écologie)

MSc(économique)
Maîtrise ès sciences (économique)

MScEd
Maîtrise en sciences de l'éducation
Maîtrise ès sciences de l'éducation

MSc(Edphys)
Maîtrise ès sciences (éducation physique)

MSc(énergie)
Maîtrise ès sciences (énergie)

MSc(Eng)
Master of science in engineering

MScF
Master of science in forestry

MScH
Maîtrise ès sciences en hygiène

Appendix B

Masters Degrees (cont'd)

MSc(Kinesiology)
Master of science (kinesiology)

MSc(mathématiques)
Maîtrise ès sciences (mathématiques)

MScN
Master of science in nursing

MSc(Nut)
Maîtrise en nutrition

MSc(océanographie)
Maîtrise ès sciences (océanographie)

MSc(opphys)
Maîtrise ès sciences en optique physiologique

MScPhm
Master of science in pharmacy

MSc(PhysEd)
Master of science (physical education)

MSc(physique)
Maîtrise ès sciences (physique)

MSc(Pl)
Master of science in urban and regional planning

MScSanté(sport)
Maîtrise en sciences de la santé (sport)

MScSoc
Maîtrise en sciences sociales

MScTélécommunications
Maîtrise ès sciences (télécommunications)

MScV
Maîtrise en sciences vétérinaires

MSD
Doctorate in mediaeval studies

MServSoc
Maîtrise en service social

MSL
Licentiate in mediaeval studies

MSN
Master of science in nursing

MST
Master of sacred theology

MSW
Master of social work

MTh
Maîtrise en théologie
Master of theology

MThpast
Maîtrise en théologie pastorale

MTrad
Maîtrise en traduction

MUP
Master of urban planning

MusB
Bachelor of music

MusBac
Bachelor of music
Bachelor of music in performance

MusDoc
Doctor of music

MusM
Master of music

MVA
Master of visual arts

Appendix C

University Diplomas

DClChem
Diploma in clinical chemistry

DDPH
Diploma in dental public health

DHP
Diplôme en hygiène publique

DIH
Diploma in industrial health

DipAnaes
Diploma in anaesthesia

DipBact
Diploma in bacteriology

DipBusAdmin
Diploma in business administration

DipDentHyg
Diploma in dental hygiene

DipDHyg
Diploma in dental hygiene

DipEandCH
Diploma in epidemiology and community health

DipEd
Diploma in education

DipEdAdmin
Postgraduate diploma in educational administration

DipEng
Diploma in engineering

DipEngTechnol
Diploma in engineering technology

DipForTechnol
Diploma in forest technology

DipHA
Diploma in hospital administration

DipinEng
Diploma in engineering

Dipladm
Diplôme en administration

DiplDN
Diplôme de droit notarial

DiplEtSpécServSoc
Diplôme d'études spécialisées en service social

DipLibTechnol
Diploma in library technology

GradEdDip
Graduate diploma in education

ArtDipMus
Artist diploma in music

DMVP
Diplôme en médecine vétérinaire préventive

DPA
Graduate diploma in public administration

DPH
Diploma in public health

DipNSA
Diploma in nursing service administration

DipNutrit
Diploma in nutrition

DipOphthSc
Diploma in ophthalmology

DipOPN
Diploma in outpost nursing

DipOralPath
Diploma in oral pathology

DipOralSurg
Diploma in oral surgery and anaesthesia

DipOrthodont
Diploma in orthodontics

DipPaedodont
Diploma in paedodontics

DipPeriodont
Diploma in periodontics

DipPHN
Diploma in public health nursing

DipPhysio
Diploma in physiotherapy

DMR(D)
Diploma in radiology (diagnosis)

DMRD
Diploma in diagnostic radiology

DMRT
Diploma in therapeutic radiology

DipSpeechPath
Diploma in speech pathology

DipSW
Diploma of social work

DPsych
Diploma in psychiatry

DVPH
Diploma in veterinary public health

AdvDipSW
Diploma in advanced social work

Appendix D

University Certificates

AA
Associate in arts
Diploma of associate in arts

AKC(NS)
Associate of King's College (Nova Scotia)

AMusWesternBoard
Associate in music

ANSCAD
Associate of the Nova Scotia College of Art and Design

ATh
Associate in theology

CAPES
Certificat d'aptitudes pédagogiques à l'enseignement secondaire

CEC
Certificat pour l'enseignement collégial

CECP
Certificat pour l'enseignement collégial professionnel

CEE
Certificat pour l'enseignement élémentaire

CertAng
Certificat en anglais (langue seconde)

CertAnimationPedBib
Certificat en animation pédagogique des bibliothèques

CertAppSci
Certificate of applied science

CertMat
Certificat en mathématiques

CertNurCom
Certificat en nursing communautaire

CertPA
Certificate in public administration

CertPHN
Certificate in public health nursing

CertScEnvironnement
Certificat en sciences de l'environnement

CertTechnologieElectricité
Certificat de technologie en électricité

CertTechnologieMécanique
Certificat de technologie en mécanique

CertTechSup
Certificat de technicien supérieur

CertTraduction
Certificat en traduction

CES
Certificat pour l'enseignement secondaire

CESP
Certificat pour l'enseignement secondaire professionnel

CPEP
Certificat pour l'enseignement professionnel

CPH
Certificate in public health

CPSS
Certificate in public service studies

Post-Secondary Education in the Census

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Post-Secondary Education in the Census

1. Objective

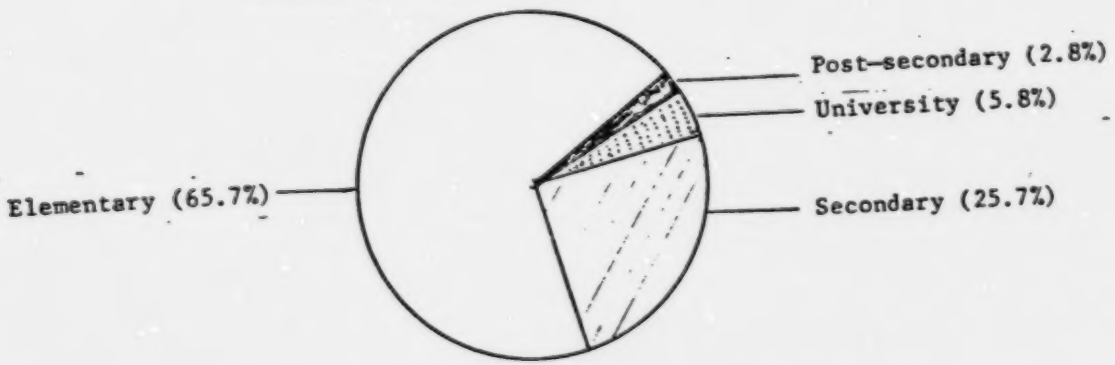
The purpose of this paper is to examine the transfer status of post-secondary programmes given at the community colleges across Canada, and to review the feasibility of retaining this classification in the census.

2. The Position of Post-secondary Education in the Census

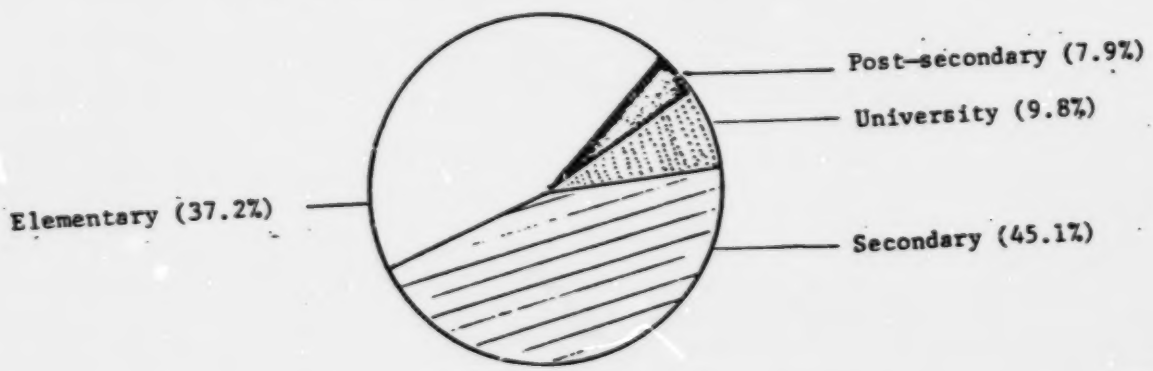
In 1971 the Census of Canada became committed for the first time to inquiry into post-secondary non-university level education. From a demographic point of view, the segment of the population with this type of education is relatively small at about five percent of the total population of Canada. (Percentages with post-secondary education in relevant population sub-groups are illustrated in Figure I). On the other hand, it is generally agreed that there has been a substantial growth in population with this type of training in recent years, so that it is a subject of special interest within the spectrum of Canadian education itself.

Figure 1

The In-school Population, Canada, 1971



The Out-of-school Population, Canada, 1971



Aside from its size and growth potential however, the real significance of post-secondary education to the Census resides in its role as a component of statistical information related to say, labour force activity and special manpower studies. As such, its classification into transfer or university credit type programmes as opposed to trade or other vocational programmes is of considerable interest. Census planners in 1971 and 1976 have attempted to obtain, with varying degrees of success, this breakdown of post-secondary education (Figure 2). The substance of this report should add significantly to the background of information required to continue (or discontinue) efforts in this direction.

Figure 2

Post–secondary, 1971 Census

23. How many years of schooling have you had since secondary school?

	None	1	2	3	4	5	6+
University →	○	○	○	○	○	○	○

	None	1	2	3+	
Other (*See Instruction Booklet.*) →	○	○	○	○	■

24. Do you have a university degree, certificate or diploma?

Mark highest academic qualification.

- ○ No university degree, certificate or diploma
- ○ Yes, a university certificate or diploma (below Bachelor level)
- ○ Yes, Bachelor degree
- ○ Yes, First Professional degree
- ○ Yes, a Master's or equivalent, or earned Doctorate (*e.g., Ph.D., Ed.D.*)

25. Have you EVER COMPLETED a full-time vocational course of three months or longer?

Do not include university or high school courses. ■

- ○ Yes, apprenticeship course
- ○ Yes, other full-time vocational
- ○ No → GO TO QUESTION 26

(a) Describe course or apprenticeship of longest duration

(*e.g., auto mechanic, chemical technology, drafting, commercial art, X-ray technician, accounting, barbering . . .*)

(b) How long was this course or apprenticeship?

- ○ 3– 5 months
- ○ 6–12 months
- ○ 1–2 years
- ○ 2–3 years
- ○ More than 3 years

(c) When did you complete this course or apprenticeship?

- ○ Before 1946
- ○ 1946–1955
- ○ 1956–1960
- ○ 1961–1965
- ○ 1966–1968
- ○ 1969–1971

Post–secondary, 1976 Census

(b) How many years of university level education have you completed? Include university transfer courses of community colleges and CEGEPs (general).

- ○ None
- ○ 1 year or less
- ○ 2 years
- ○ 3 years
- ○ 4 years
- ○ 5 years
- ○ 6 years or more

(c) How many years of post-secondary non-university training at an educational institution have you completed? *(e.g. teachers' college, nursing school, community college (vocational and technical), CEGEP (professional), etc.)*

- ○ None
- ○ 1 year or less
- ○ 2 years
- ○ 3 years or more

■

◆

Have you attended an educational institution at any time since last September?

- ○ No → Skip to Question 10
- ○ Yes, full-time
- ○ Yes, part-time, day or evening

What kind of educational institution was it? ■

- ○ Elementary or secondary
- ○ University
- ○ Post-secondary non-university

3. The Design of the Report

In Part 4 we present commentary on the structure of programmes given at the community colleges, especially with respect to their classification into the transfer/university credit or trade/other vocational categories. By and large, this information was obtained through correspondence established with administrators of the colleges, a record of which is presented in Appendix A. In Part 5 we show the development of a system that would provide for the separation of programmes into one or the other of the two categories noted above. This information was obtained from the most recent issues of catalogues and calendars of courses given at the institiutions.[1] Recommendations for future censuses, and conclusions based on the substances of this report are given in Part 6 and 7.

4. Commentary on Programmes Given by the Community Colleges and Technical Institutes

Before dealing with the comments of the individual adminstrators of the community colleges within each province, some generalized observations taken from the correspondence as a whole should be noted:

(a) Several administrators have indicated the need to differentiate between "programme" and "course" when discussing post-secondary education. For example, Electrical Technology as a programme includes individual subject matter courses in Mechanics, Drafting, Circuit Theory, Servo Systems and Project Design. It is usually the intention of the Census and other surveys to obtain statistical information in terms of the "programme" of studies, therefore this expression should be more commonly employed in place of the "course" of studies.

(b) It is apparent that, from an administrative point of view, the term "transfer" is, to put it mildly, dichotomous in meaning. In one sense it refers to programmes involving a formal arrangement between the sending institution (community college) and the receiving institution (university), as in the provinces of British Columbia, Alberta and Manitoba, where two years of college work may be equated to two years of university. In a second sense, the term "transfer" is employed by the other provinces where there is no formal arrangement between the sending and the receiving institutions, though full or partial credits may be transferable depending upon the circumstances. These circumstances could include the cognate nature of the student's higher level of studies at the university, his grade average in secondary school and at the community college level, and the degree of intensity of the course content provided by the college.

(c) Within most of the provinces of Canada there are specialized post-secondary institutes such as agricultual colleges and educational institutes that permit students to transfer one or two full years of credit into the cognate university faculty, e.g., The Nova Scotia Agricultural College and the Atlantic Institute of Education.

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1. Names of institutions from which catalogues and calendars were obtained are given in the References of this report. Publications are available for perusal in Room E335.

(d) Post-secondary education in the Province of Quebec is unique. Pre-university programmes given at the CEGEP's are not necessarily comparable to transfer programmes provided by the Western Provinces, i.e., British Columbia, Alberta, and Manitoba. (A more complete explanation of the situation in Quebec may be found in Section 4-4.)

4.1 Newfoundland

The community colleges of this province do not have formal arrangements with any university to accept graduates nor to grant credits for courses. However, the leading institutes such as the College of Fisheries, Navigation, Marine Engineering and Electronics, offer a number of highly technical programmes in such fields asElectronics and Electrical Technology which have, at the discretion of the university, been granted university credits. Some students have, for example, received practically full credit towards a Bachelor of Engineering degree for programmes taken in Electrical/Electronics Technology. Some students have, with only one extra year of study, received a Bachelor of Science degree in Food Technology. As a general rule, universities accept for credit technological programmes of at least three years duration with a secondary or high school certificate as a prerequisite (Grade XI in Newfoundland). Programmes known to have been accepted for university credits are listed in Section 5.2.

4.2 Nova Scotia

In general, the post-secondary institutions of this province, e.g., The Nova Scotia Technical College, do not have formal arrangements with the universities to accept graduates nor to grant credit for programmes. However, universities have been known to accept for credit technological programmes of two years duration with a secondary or high school certificate as a prerequisite (Grade XII in Nova Scotia).

One exception to this rule is the Nova Scotia Agricultural College which offers the first two years of a four year course leading to a degree in Agricultural Science, and the first three years of a five year course leading to a degree in Agricultural Engineering. Most of its graduates in Agricultural Science complete the work for a degree at Macdonald College of McGill University, the University of Guelph, or the University of Maine. Most of its graduates in Agricultural Engineering proceed to the Nova Scotia Technical College for the final two years. Qualified graduates may be considered for admission to the course in veterinary medicine offered by the University of Guelph.

Information provided by other institutions such as the Nova Scotia Land Survey Institute indicates that, for the most part, programmes taken at these colleges are terminal (Cartography, Surveying and Photogrammetry). However, individual innstances of graduate students receiving some credits at the university level have been cited. As a role, however, programmes are largely of the non-transfer and non-university credit types. (Section 5.3)

4.3 New Brunswick

The post-secondary institutions of New Brunswick, e.g., The New Brunswick Community College, do not have formal arrangements with any university to accept graduates nor to grant credits for courses. However, universities often accept for credit technological programmes of at least two years duration with a secondary or high school certificate as a prerequisite (Grade XI in New Brunswick).

Many of the more specialized training institutes of this province offer courses of a purely trade or vocational nature. The Marine Forest Ranger School, for example, claims to offer courses within a post-secondary programme which occupy that part of the spectrum between the trade schools and the professional forestry programmes given at the universities, i.e., the graduates are prepared for careers as forest technicians. (Section 5.4)

4.4 Quebec

In Quebec, administrative design and control by the Province has resulted in most post-secondary education being given at the Colleges d'enseignment general et professionel (CEGEP's). This education, provided at public expense, gives career and pre-university education at the college level to all qualified graduates of secondary schools (Grade XI in the Province of Quebec). Thus, the system provides for the preparation of students either for a technical career or for advanced studies at the university. Both of these preparations involve some degree of specialization, either in the knowledge of techniques required for a particular career such as nursing or business administration, or in the contents of methods of a particular branch of university studies such as arts and science or the social science. According to the administration, both career students and pre-university students are involved in professional education from their first day at the CEGEP's (Figure 3).

In the context of our present consideration of transfer courses, the tertiary nature of CEGEP training in the educational continum of Quebec should be considered. From the administrative point of view, it is that level of education between secondary school and university, and therefore not equivalent to two years of university as is the case in those provinces where formal transfer programmes are established, such as British Columbia, Alberta and Manitoba. In fact, like most other provinces, there are some courses that may be granted credit depending upon the receiving (university) institution.

In relation to the other provinces of Canada, however, the academic status of pre-university programmes given at the CEGEP's may be compared to the senior matriculation year of secondary education in some of the provinces which is equivalent to the first year of university in some faculties,

Figure 3

Career and Pre-university Programmes Given at the CEGEP's in Quebec Province (1)

Pre-university Programme

PATTERNS OF STUDY
PRE-UNIVERSITY PROGRAMS

Some courses listed on this chart may not be available at both campuses.
Specific course offerings are announced at pre-registration.

PRE-UNIVERSITY COURSE PATTERNS
(and see notes below chart)

	Total Credits
CORE COURSES 4 ENGLISH 4 HUMANITIES ***	8
+	
FIELD OF CONCENTRATION 12 COURSES FROM 3 OR 4 DISCIPLINES WITHIN ONE OF THE THREE GROUPS (MAXIMUM OF 6 COURSES IN THE SAME DISCIPLINE)	12
+	
COMPLEMENTARY COURSES FOUR COURSES FROM OUTSIDE THE DISCIPLINES IN THE FIELD OF CONCENTRATION	4

GROUPS OF DISCIPLINES

1.	2.	3.
SCIENCES (Health or Pure/Applied Science)	SOCIAL SCIENCES or COMMERCE	LITERATURE AND LANGUAGES or CREATIVE ARTS
COMPUTER SCIENCE	COMPUTER SCIENCE	COMPUTER SCIENCE
MATHEMATICS	MATHEMATICS	MATHEMATICS
PHILOSOPHY	PHILOSOPHY	PHILOSOPHY
RELIGION	RELIGION	RELIGION
BIOLOGY	BUSINESS ADMINISTRATION	CINEMA
CHEMISTRY	*ANTHROPOLOGY and SOCIOLOGY	DRAMA (Theatre Arts)
*PHYSICS and GEOLOGY (includes Astronomy)	*ECONOMICS and POLITICAL SCIENCE	FINE ARTS
	GEOGRAPHY	MUSIC
	*HISTORY AND CLASSICS	ENGLISH LITERATURE
	**MODERN LANGUAGES	FRENCH
	– ENGLISH LIT	GERMAN
	– FRENCH	HEBREW
	– GERMAN	ITALIAN
	– ITALIAN	RUSSIAN
	– HEBREW	SPANISH
	– RUSSIAN	
	– SPANISH	
	PSYCHOLOGY	

Career Programme*

PATTERNS OF STUDY
CAREER PROGRAMS

243.00
ELECTROTECHNOLOGY
(Ste-Croix Campus)

SECOND SEMESTER

	English
	Humanities
201-103C-73	Calculus I
203-102-74	Mechanics
242-201-76	Drafting II
243-210-74	A.C. Circuit Theory A
243-220-74	A.C. Circuit Theory B

THIRD SEMESTER

	English
	Humanities
201-203-73	Calculus II
203-302-74	Optics and Modern Physics
243-310-74	Elements of Electronics I
243-320-74	Industrial Electronics
243-330-75	D.C. Machines

FOURTH SEMESTER

	English
	Humanities
243-410-74	Elements of Electronics II
243-420-74	Industrial Electronics II
243-430-75	A.C. Machines
243-440-75	Logic Circuits
420-911-75	Introduction to FORTRAN IV

FIFTH SEMESTER

243-503-74	Project Design I
243-513-74	Industrial Instrumentation
243-520-75	Servo Systems
243-523-74	Industrial Automation I
243-550-74	Pulse Techniques
243-560-74	Measuring Instruments

SIXTH SEMESTER

243-603-74	Project Design II
243-613-74	Measuring Instrumentation
243-623-74	Industrial Automation II
243-643-74	Industrial Television
243-650-75	Numerical Techniques
243-663-74	Telemetering Systems

*Students who are not functionally bilingual are advised to include French in their program.

(1) Examples taken from the Vanier College Calendar, 1976

e.g., Grade 12 in the Province of Manitoba is equivalent to University I in the Faculty of Arts and Science; Grade 13 in the Province of Ontario is equivalent to University I. In support of this M. Lussier comments, "When a graduate from the CEGEP's is registered for a programme in a Canadian University outside of Quebec, he usually receives a credit of one year for his diploma." [2]

Thus, for the Province of Quebec, the idea that pre-university programmes given at the CEGEP's may be equated to two-year transfer programmes is a misconception. As in the other provinces of Canada, there may be credits and partial credits granted for programmes and courses depending upon the receiving institution. (Section 5.5)

4.5 Ontario

In Ontario, the community colleges or technical institutes, named Colleges of Applied Arts and Technology (CAAT's) do not have formal transfer arrangements with the universities, so that programmes fall into the vocational category. However, when evaluated by universities, credit is usually given in cognate areas, particularly if the work completed has been in a three-year technological programme, as opposed to a two-year diploma or a one year certificate programme. Typically, a student having obtained a three year College diploma (with the secondary school certificate as a prerequisite), may expect to receive two years university credit in a cognate programme.

Therefore, in this province a three-year college programme given at a CAAT has been known to be accepted as being equivalent in course content to two years of university credit, although the administrative arrangements between the sending and receiving institutions do not exist as in the Western Provinces. It is interesting to note also that the Registrars of Durham and Niagara Colleges state that all universities credit some of the courses given at their institutions, but that the number of these vary from university to university, and are constantly changing. Apparently the granting of partial credits for individual courses within programmes is a feature of "transferance" among many post-secondary institutes of the province. (Section 5.6)

4.6 Manitoba

In Manitoba the community colleges have a special transfer agreement with the university system in and around Winnipeg. There is, for example, an arrangement between the University of Winnipeg and Red River Community College in the fields of Business Administration, Chemical Technology and Child Care. Red River Community College diploma graduates in these programmes may complete degree requirements in a cognate faculty at the University of Winnipeg in two years. Conversely, a graduate of the University of Winnipeg with a major in Chemistry, Administration Studies,

2. Memorandum January 6, 1977 M. Robert Lussier to G. Mori

or Developmental Studies may complete the cognate diploma programme at the Red River Community College in one year. In Section 5.7 those programmes considered to come into the "transfer" category are listed for the Province of Manitoba.

4.7 Saskatchewan

There is no special arrangement in the Province of Saskatchewan whereby programmes given in the community colleges may be transferred to the university system. However, there are selected courses within the two-year diploma programmes in Business and Technology which have been recognized for credits at the University of Saskatoon and/or the University of Regina. Such courses are listed for the Province of Saskatchewan in Section 5.8.

4.8 Alberta

The Province of Alberta has a highly developed transfer system, The Council of Admissions and Transfer being charged with the continual improvement of arrangements for the transfer of credits among universities, colleges, technical institutes and other post-secondary institutions.

The Department of Education of this province has established four transfer arrangements: (1) The University Transfer Programme; (2) Diploma, Certificate and Other Specific Programmes; (3) Special Inter-Institutional Arrangements; and (4) Individual Assessment. The first two of these are of particular relevance to the present task of classifying courses reported in the census and other surveys. In the case of the University Transfer Programme, the provincial government can designate programmes and subject matter fields in which courses may be offered up to the level of first and second year university. Full credit is given for these programmes provided that the courses taken meet the requirements of the particular programme at university which the student wishes to enter. In the case of Diploma, Certificate and Other Specifice Programmes, the government recognizes that certain diplomas or certificate programmes in the comunity colleges have appropriate academic content and level to warrant university transfer credit. Universities grant credit, either on a course by course basis or in the form of specific credits (partial credits) for individual courses, or groups of courses completed at the colleges. Again, credits are granted to the extent that they meet the degree programme requirements that the student wishes to enter.

The listing presented for Alberta in Section 5.9, as for all other provinces, is comprised of programmes of study not individual courses within programmes. It should be remembered however, that the highly developed transfer system of the province provides for a multitude of individual courses (Accountancy, Biology, Chemistry, etc) many of which are included in the listed programmes.

4.9 British Columbia

British Columbia also has a highly developed "trasfer" system in which some programmes given at most of the community colleges are recognized by the Universities of British Columbia, Simon Fraser University and the University of Victoria, to be equivalent to university credit up to the second year. Again, as in all other provinces of Canada, community colleges providing technological programmes, indicate that there are individual courses that have been known to be accepted by the universities on a full or partial-credit basis.

It is also apparent from information provided in correspondence and course calendars offered by the community colleges within this province, that there is a wide variation in the amount and type of high level vocational training given by the institutions as compared to trade-type training. In the case of Vancouver Community College (Langara), for example, the Registar comments, "It should be noted that all courses offered at the Vancouver Community College (Langara) are at the post-secondary level, even though not all of them have specific transfer credit to other institutions, and none of the courses offered at Langara are considered to be of the 'trade type'."

Those programmes considered to be equivalent to one or two years of university credit are listed in Section 5.10 for the Province of British Columbia.

5. Programmes Classified into Transfer/University Credit and Trade/Other Vocational Groups within the Community Colleges of Each Province

5.1 The following sections of Part 5 present a breakdown of post-secondary non-university education given at the community colleges into the Transfer/University Credit and Trade/Other Vocational categories by province. Information supporting this work was obtained from correspondence carried out with the administrators of the colleges and from the course catalogues and calendars. Due to limited resources a sample of no more than three typical colleges is taken from each province.

It should be noted that most of the programmes designated as Transfer/University Credit types, particularly in provinces other than British Columbia, Alberta and Manitoba, are not granted credits on a formal pre-arranged basis between the colleges and universities. For this reason the user should employ some caution because, while a programme may be of university intensity, it may be accepted at one institution but not at another for various reasons, such as the admittance requirements of a cognate facultyinto which the student wishes to enter, or the student's grade average at the college level. By-and-large, however, the majority of these programmes come into the technological category being of two or more years duration, except in the case of Ontario and Newfoundland where programmes of this calibre are generally of three or more years duration.

Transfer/University Credit and Trade/Other Vocational Programmes Given at the Community Colleges, 1976

5.2 Newfoundland

Institute	Transfer/University Credit Programmes (1)	Trade/Other Vocational Programmes (2)
The College of Fisheries, Navigation, Engineering and Electronics.	1. Electrical Engineering Technology 2. Electronics Technology 3. Food Technology 4. Mechanical Engineering Technology 5. Nautical Science (Merchant Marine) 6. Nautical Science (Fishing Techniques) 7. Naval Architecture	1. Marine Electronics 2. Marine Electrical Practic 3. Industrial Instrumentatic 4. Food Technology (Short Course) 5. Marine Deisel Mechanics 6. Refrigeration Plant Operation 7. Engineer 1st Class 8. Engineer 2nd Class 9. Engineer 3rd Class 10. Engineer 4th Class 11. Chief Engineer 12. Fishing Techniques 13. Marine Cooking 14. Marine Stewarding 15. Watchkeeping Mate 16. First Mate Foreign Going 17. Master Foreign Going 18. First Mate Intermediate Trade 19. Master Intermediate Trade 20. First Mate Local Trade 21. Master Local Trade 22. Master Under 350 Tons and Tugmaster 23. First Mate Ferry Steamshi 24. Master Ferry Steamship. 25. Fishing Mate

(1) Course of at least 3 year duration.
(2) Courses of varying length, less than 3 years.

Transfer/University Credit and Trade/Other Vocational Programmes Given at the Community Colleges, 1976

5.3 Nova Scotia

Institute	Transfer/University Credit Programmes (1)	Trade/Other Vocational Programmes (2)
Nova Scotia Agricultural College	1. Agricultural Science 2. Agricultural Engineering	1. Agricultural Business Technician 2. Agricultural Engineering Technician 3. Annual Science Technician 4. Farm Equipment Technician 5. Plant Science Technician 6. Biology Laboratory Technology 7. Chemistry Laboratory Technology 8. Ornamental Horticulture Technology 9. Farming Technician
Nova Scotia Land Surveys Institute	—	1. Cactography 2. Photogrammetry 3. Surveying 4. Survey Assistant 5. Community Planning
Atlantic Institute of Education	1. Developing and Evaluating Teaching Resources: Language Arts 2. Precision Teaching for Mastery Learning: Concepts and Methods 3. Introduction to Educational Statistics 4. Methods of Research in Education 5. Intermediate Course in Educational Statistics 6. Fundamentals of Curriculum and Instruction Theory and Practice	1. Local Resources for Senior Education 2. Psychological Educational assessment and Educational Programming for Exceptional children in Regular classrooms.

Transfer/University Credit and Trade/Other Vocational Programmes Given at the Community Colleges, 1976

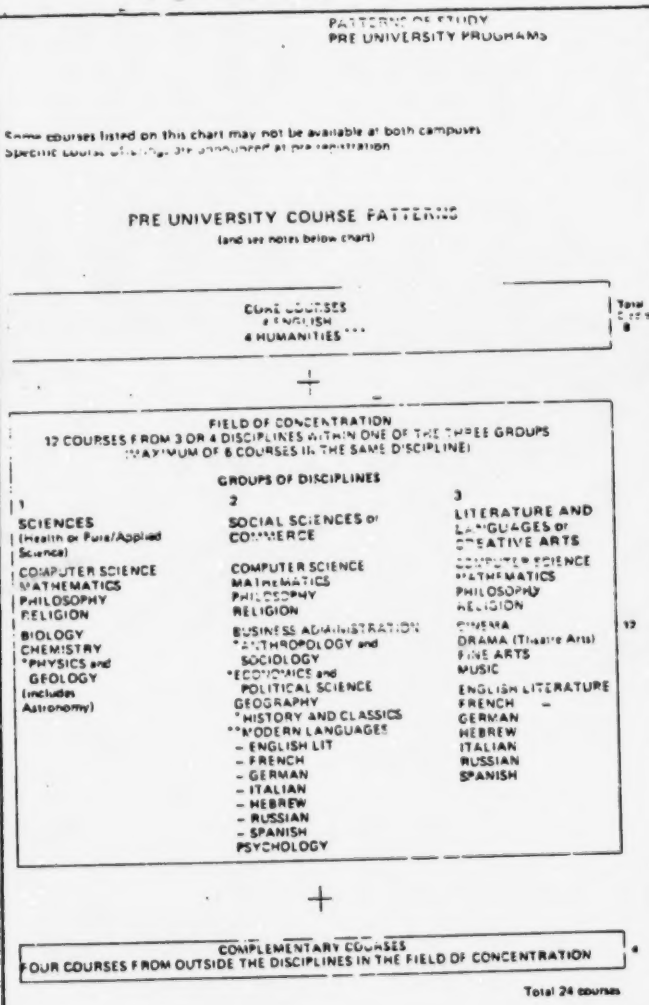
5.4 New Brunswick

Institute	Transfer/University Credit Programmes (1)	Trade/Other Vocational Programmes (2)
The New Brunswick Community College	1. Business Technology 2. Accounting 3. Administration 4. Civil Technology 5. Mechanical Technology 6. Electronic Technology 7. Clerical Technology 8. Industrial Instrucmentation Technology	1. English Stenographic 2. Bilingual Stenographic 3. Cook Trade 4. Dressmaking 5. Mental Retardation Counsellor 6. Motor Vehicle Repair (Bod 7. Motor Vehicle Repair (Mechanical) 8. Heavy Equipment Repair 9. Bricklaying 10. Carpentry 11. Plumbing 12. Industrial Electricity 13. Distribution Business Education 14. Clerk Typist 15. Electronic Servicing (Radio-TV) 16. Welding "B" 17. Sheet Metal Fabrication 18. Refrigeration and Air Conditioning 19. Stationary Engineering 20. Barbering 21. Beauty Culture 22. Nursing Assistant Trainir 23. Education Uptraining 24. Apprenticeship Training 25. Dicta-Typist

(1) Courses at least two years duration.
(2) Courses of varying length, less than 2 years.

Transfer/University Credit and Trade/Other Vocational Programmes Given at the Community Colleges, 1976

5.5 Quebec

Institute	Transfer/University Credit Programmes (1)	Trade/Other Vocational Programmes (2)
Vanier College (CEGEP)		1. Dental Hygiene 2. Food Services Supervisor 3. Medical Laboratory Technician 4. Cytotechnolgoy 5. Inhalation Thearpy 6. Radiology Technicians 7. Natural Science Technolog 8. Nursing 9. Forest Technology 10. Chemical Technology 11. Architectural Technology 12. Civil Engineering Technology 13. Mechanical Systems Technology 14. Mechanical Technology 15. Electrotechnology 16. Aircraft Maintenance Technology 17. Police Technology 18. Child Care Technology 19. Special Care Counselling 20. Urban Planning 21. Social Service 22. Community Recreational Leadership 23. Documentation Technology 24. Business Administration 25. Data Processing

(1) Courses of 2 years duration (Collegial).
(2) Courses of 3 years duration (professional).

Transfer/University Credit and Trade/Other Vocational Programmes Given at the Community Colleges, 1976

5.7 Manitoba

Institute	Transfer/University Credit Programmes (1)	Trade/Other Vocational Programmes (2)
Red River Community College	1. Business Administration 2. Chemical Technology 3. Biochemical Technology 4. Civil Technology 5. Building Technology 6. Design and Drafting Technology 7. Structural Technology 8. Surveying Technology 9. Computer Technology 10. Electrical Technology 11. Electronic Technology 12. Instrumentation Technology 13. Heat and Power Technology 14. Production Technology 15. Power Engineering Technology 16. Business Teacher Education(3) 17. Industrial Arts Teacher Education(3) 18. Vocational Industrial Teacher Education(3)	1. Aircraft Maintenance 2. Auto Body Repair 3. Auto Mechanical Repair 4. Baking Commerical 5. Barbering 6. Business Accountancy 7. Carpentry 8. Chef Training 9. Child Care 10. Clerk Typist 11. Clerical Bookkeeping 12. Commercial and Industrial Sales 13. Cooking, Commercial 14. Dental Assistant 15. Diesel Mechanics 16. Domestic Electronics 17. Drafting, Archituctural 18. Drafting Machine 19. Electrical 20. Major Appliance Service 21. Electronics Industrial 22. Graphic Arts 23. Hairdressing 24. Heavy Duty Operators 25. Library Technician

(1) Courses of at least 2 years duration.
(2) Courses of varying length, less than two years.
(3) Granted course credits in the Facility of Education - U. of Manitoba.

Transfer/University Credit and Trade/Other Vocational Programmes Given at the Community Colleges, 1976

5.8 Saskatchewan

Institute	Transfer/University Credit Programmes (1)	Trade/Other Vocational Programmes (2)
Saskatchewan Technical	1. Accountancy(3) 2. Administration(3) 3. Data Processing(3) 4. Retailing 5. Secretarial Science(3) 6. Commercial(3) 7. Architectural Engineering Technology 8. Civil Engineering Technology 9. Engineering Drafting Technology 10. Electrical Engineering Technology 11. Electronics Engineering Technology	1. Auto Body Repair 2. Building Construction 3. Commercial Cooking 4. Electrical Construction and Maintenance 5. Heavy Equipment Operatio 6. Truck Driving Training 7. Masonry Construction 8. Motor Vehicle Mechanical Repair 9. Radio-TV and Communicati Servicing 10. Welding
Kelsey Institute	1. Biological Sciences Technology 2. Chemical Technology and Chemical Engineering Technology 3. Mechanical Engineering Technology 4. Renewable Resources Technology 5. Water Sciences Technology 6. Diploma Nursing Programme	1. Combined Clinical Labratory and X-Ray 2. Dental Assistant 3. Medical Laboratory Technician 4. Nursing Assistant Programme 5. Auto Body Repair 6. Cabinet-Making and Millwork 7. Carpentry 8. Farm Machinery Mechanic 9. Farm Welding 10. Heavy Duty Repair 11. Industrial Mechanics 12. Machine Shop Practice 13. Motor Vehicle Mechanica Repair 14. Pipefitting 15. Plumbing and Grafitting

(1) Courses of at least 2 years duration.
(2) Courses of varying length, less than 2 years.
(3) May be used as credits toward B.E.D. at the University of Regina.

Transfer/University Credit and Trade/Other Vocational Programmes Given at the Community Colleges, 1976

5.9 Alberta

Institute	Transfer/University Credit Programmes (1)	Trade/Other Vocational Programmes (20
Southern Alberta Institute of Technology	1. Aeronautical Engineering Technology 2. Air Conditioning Engineering Technology 3. Aircraft Maintenance Engineers Technology 4. Animal Health Technology 5. Architectural Technoligies 6. Automative Service Technology 7. Avionics Technology 8. Broadcast Electronic Technology 9. Business Admin. (Accounting Major) 10. Business Admin. (Marketing Major) 11. Business Admin. (Real Estate Major) 12. Business Admin. (Special Studies) 13. Chemical Engineering Technology 14. Chemical Technology 15. Chemical Technology (Industrial Analysis and Quality Control) 16. Chemical Technology (Biochemsitry) 17. Chemical Technology (Research) 18. Computer Technology 19. Computer Technology (Commercial) 20. Computer Technology (Technical) 21. Dietary Services Technology 22. Electrical Engineering Technology 23. Electronics Technology 24. Electronics Engineering Technology 25. Engineering Graphics Technology (Drafting)	1. Basic Plant Operations 2. Commercial Baking 3. Commercial Cooking 4. Diesel Mechanics 5. Emergency Para-Medical Care 6. Pre-Courses 7. Pre-Courses (Chemistry) 8. Pre-Courses (English) 9. Pre-Courses (Mathematics 10. Pre-Courses (Physics) 11. Process Operations 12. Process Piping Drafting 13. Recreational Facilities Operations and maintenance 14. Short Order and Specialt Cooking 15. Small Engine Mechanics

(1) Courses of at least 2 years duration.
(2) Courses of varying length, less than 2 years.

Transfer/University Credit and Trade/Other Vocational Programmes Given at the Community Colleges, 1976

5.10 British Columbia

Institute	Transfer/University Credit Programmes (1)	Trade/Other Vocational Programmes (2)
New Caledonia Community College	1. Business Administration 2. Construction Technology 3. Data Processing 4. Diploma Nursing 5. Early Childhood Education 6. Forest Resource Technology 7. Medical Laboratory Technology	1. Automotive mechanics 2. Dental assisting 3. Drafting 4. Heavy Duty Mechanics 5. Heavy Equipment Operating 6. Logging 7. Log Building Construction 8. Power Engineering 9. Practical Nursing 10. Small Engine Repair 11. Vocational Preparation 12. Welding
Vancouver community college	-	1. Automotive Body Repair 2. Automotive Mechanical Repair 3. Building Construction 4. Diesel Engineering 5. Drafting 6. Electricity and Industrial Electronics 7. Electrical Journeyman upgrading 8. Electro-mechanics 9. TV-Radios Technician 10. Electronics Technician 11. Power Engineering 12. Instrument and Process Control 13. Computer Technology

(1) Courses of al least 2 years duration.
(2) Courses of varying length, less than 2 years.

6. Recommendations for Future Censuses

6.1 It would seem reasonable to reconsider the "transfer" Classification as a subject for Census inquiry because of difficulties in obtaining a concept appropriate to all of the provinces, i.e., presently, some community colleges within a few of the provinces (British Columbia, Alberta and Manitoba) have adopted a concept based on administrated formal arrangements between themselves and the universities, comparable to the junior college systems, while the colleges and universities of the remaining provinces recognize transfer largely as a function of course content. Therefore, in lieu of the "transfer" classification which is difficult to define to the satisfaction of all community colleges within the provinces, it would seem to be more realistic to look at key elements such as secondary school graduation, years of post-secondary education and the college diploma as reported in the certification category. Qualifications such as these would typify the higher level of "tertiary" or post-secondary non-university education which is a fast developing entity within the educational continuum.

6.2 If the transfer programmes are retained as a classification of post-secondary education for all of the provinces, the following refinements in concept would seem to be desireable:

(1) A firm concept for the term "transfer" should be established embracing the administrative approach, i.e., a formal arrangement between the sending institution (community college) and the receiving institution (university) whereby full university credits for programmes taken at the college are transferable. This concept presently applies to some of the community colleges in the Provinces of British Columbia, Alberta and Manitoba.

(2) For the remainder of the provinces the concept of transfer should be defined in terms of programme content, and should be accompanied by basic guidelines peculiar to the provinces:

(a) In the Provinces of Ontario and Newfoundland transfer programmes may be defined as diploma courses in technology of at least three years duration with the secondary school certificate as a prerequisite (5.2,5.6). In the remaining provinces, the same guidelines hold except that courses are of two or more years duration (5.3,5.4,5.7).

(b) Transfer programmes provided by specialized post-secondary institutions in most of the provinces such as agricultural colleges and educational institutes which are granted credits at specificed universities on a pre-arranged basis(4c).

6.3 In the case of Quebec Province, post-secondary education taken at the CEGEP's should be classified into the "career" and "pre-university" categories. In this province, post-secondary education has been administratively established as tertiary education, i.e., occupying a third level in the educational continum between the

secondary or high school level and university. Unlike community colleges in the other provinces, the CEGEP's of Quebec are administratively designed by the government and, as such, require special treatment, with the two categories noted above forming necessary sub-groups (4.4).

6.4 There is a need for differentiating between programmes and courses when discussing post-secondary education. Generally, on the census document and in explanatory material such as the Instruction Booklet, the word "programme" should be used instead of the word "course" (4a).

7. Conclusions

7.1 At present, there appears to be a wide interpretation of the term "transfer" among the community colleges, ranging from those that employ it in an administrative sense, involving a formal arrangement between the sending institution (college) and the receiving institution (university) to grant credits for years of work, to those that regard transfer as a function of programme content and are granted credit at the discretion of the universities.

7.2 Thus, there would seem to be grounds for discontinuing "transfer programmes" as a subject for census inquiry (6.1). If for one reason or another it is retained, it should undergo major refinements (6.2,6.3).

7.3 The province-wide CEGEP sysem, administered by the government of Quebec is unique and requires special treatment in census inquiry into post-secondary education. "Career"and "Pre-university"programmes are essential sub-groupings of CEGEP training, but it is a misconception to equate two years of pre-university training at the CEGEP's with the two-year transfer programmes such as those provided by the community colleges of British Columbia and Alberta (4d, 4.4,5.5,6.4).

7.4 In view of the above statements, and of supporting evidence making up this report, it is apparent that the classification of post-secondary non-university education into the Transfer/University Credit and Trade/Other Vocational categories is very difficult to achieve because of the varying values accorded programmes and courses from college to college and province to province. While the importance of these classifications was recognized in designing the 1976 Census questionnaire, planners did not fully realize the difficulties to be encountered in establishing a reliable concept. As a result, the statistical data could be subject to varying interpretations.

References:

1. Provincial Transfer Guide for Universities, Colleges, Technical Institutes, and Other Post-Secondary Institutions, Alberta, 1976/77

2. Unpublished Statistics, 1971 Census

3. Correspondence with Administrators of Community College Programmes, Appendix A

4. Catalogues and Calendars of Courses Given at the Community Colleges in 1976/77:

Newfoundland

College of Fisheries, Navigation, Marine Engineering and Electronics
College of Trades and Technology

Nova Scotia

Atlantic Institute of Education
Nova Scotia Agricultural College
Nova Scotia Land Survey Institute

New Brunswick

The Maritime Forest Ranger School
The New Brunswick Community College

Quebec

Bois-de-Boulogne College
Bottin (College de Levis)
Bourgemin College
Champlain College
Chicoutimi (Conservatoire de Musique)
Dawson (CEGEP)
Francois-Xavier Garneau (CEGEP)
Gaspesie (CEGEP)
Jean-de-Brebeuf College
Joliette College
Lafleche College
L'Assomption College
Levis College
Lionel Groul College
Maisonneuve College
Marie Victorin College
Montmorency College
Montreal (Conservatoire de Musique)
Quebec (Conservatoire de Musique)
Rosemont College
Saint Augustin Seminaire
Saint Foy College
Saint Hyacinthe (Agricultural)
Saint Laurent (CEGEP)
Shawinigan (CEGEP)
Sherbrooke (College)
Sillery College
Trois Rivieres (CEGEP)

Quebec (cont'd

Vanier College
Victoriaville (CEGEP)
Vincent-d'Indy

Ontario

Cambrian College
Canadore College
Centralia College
Champlain Regional College
Conestoga (CAAT)
Durham College
Fanshawe College
George Brown (CAAT)
Georgian College
Grant Mac Ewan College
Humber College
Huron College
Keewatin College
Kemptville (Agricultural)
Lambton (CAAT)
Loyalist (CAAT)
Mohawk College
Niagara College
Ridgetown College
Ryerson Polytechnical
Sault College
Seneca (CAAT)
Sheridan College
Sir Sanford Fleming (CAAT)
St. Claire College
St. Jerome College
St. Laurence College
Waterloo College

Manitoba

Assinaboine Community College
Red River Community College

Saskatchewan

Carlton Trail Community College
Kelsey Institute
La Ronge Regional Community College
Natonum Community College
Parkland Community College
Saskatchewan Technical Institute

Alberta

Alberta College
Camrose Lutheran College
Concordia College
Fairview College
Lethbridge Community College
Medicine Hat College
Mount Royal College
Olds College
Red River College
SAIT Career Campus
Vermillion College

British Columbia

Camosun College
Capilano College
Cariboo College
Douglas College
Fraser Valley College
Malaspina College
Okanagan College
Trinity Western College
Selkirk College
Vancouver Community College
Vancouver Community College (King Edward Campus)
Vancouver Community College (Langara Campus)

Appendix A

A Record of Correspondence with Community Colleges and Universities re Course Content, Canada, 1976

Institute	Prov.	Lang.	Type	Page
Algonquin	ONT	E	CC	1
Atlantic Institute of Education	NS	E	U	2-3
Cambrian College	ONT	E	CC	4
Camosun College	BC	E	CC	5
Capilano College	BC	E	CC	6
College de Levis	QUE	F	CC	7
College Durocher	QUE	F	CC	8
College du Sacré-Coeur	QUE	F	CC	9-11
College Marie-Victorin	QUE	F	CC	12
College of Fisheries, Navigation	NFLD	E	CC	13-14
College Regional Bourgchemin	QUE	F	CC	15
College Regional de la Cote-Nord	QUE	F	CC	16
Concordia College	ALTA	E	CC	17
Concordia University	QUE	E	U	18
Conservatoire D'Art Dramatique	QUE	F	CC	19
Cypress Hills Community College	SASK	E	CC	20-21
Durham College	ONT	E	CC	22
Fairview College	ALTA	E	CC	23
Grant Mac Ewen Community College	ALTA	E	CC	24
Holland College	PEI	E	CC	25
Institut de Technologie Agricole	ONT	E	CC	26
Institut de Tourisme du Quebec	QUE	F	CC	27
Lakehead College	ALTA	E	CC	28
McMaster University	ONT	E	U	29
Niagara College	ONT	E	CC	30
Nova Scotia Agricultural College	NS	E	CC	31
Nova Scotia Land Survey Institute	NS	E	CC	32
Okanagan College	BC	E	CC	33
Red River Community College	MAN	E	CC	34
Saskatchewan Technical Institute	SASK	E	CC	35
Séminaire de Sherbrooke	QUE	F	CC	36
Shawinigan	QUE	F	CC	37
St. John's College	MAN	E	U	38
The Geo. Brown College of App. Arts & Science	ONT	E	CC	39
The Maritime Forest Ranger School	NB	E	CC	40
The Sault College	ONT	E	CC	41
University of King's College	NS	E	U	42
University of Regina	SASK	E	U	44
Vancouver Community College (Langara)	BC	E	CC	45
Vanier College	QUE	E	CC	46
Wascana Institute	SASK	E	CC	47

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Vocational Training in the Census

1. Introduction

It is hoped that this report will provide some helpful background information on the development of the concept of vocational training, and the classification system employed in the 1971 Census.

In 1961, serious thought was given to the subject of vocational training, but difficulties in formulating a concept and question design appropriate to the census that would provide adequate data to meet the needs of a variety of users proved too great. Then, during the sixties, it became apparent that the phenomenal interest and growth in student population involved in post-secondary education (academic and non-academic), necessitated a question in the census, not only for the purpose of realizing the economic potential of the country in terms of vocational training, but also as an aid in measuring an increasingly important aspect of education itself.

In the first part of this report (Sections 1-5) we observe the evolution of the concept of vocational training during the tests, i.e., the 1967 Census Test, London; the 1968 Census Test, Toronto; and the 1969 Census Test, Sherbrooke, St. Catharines and Souris. In the second part (Sections 6-10) we follow the development of the coding and classification system applied to the individual vocational courses reported in the 1971 Census.

2. The 1967 Census Test, London

2.1 The concept of Vocational Training

A considerable amount of discussion prior to, and in preparation for the 1967 Census Test centred around the brief presented by Dr. J.F. Kantner (University of Western Ontario), in which he made recommendations for the 1971 Census content. While Dr. Kantner did not rate vocational training among the "high priority" subjects in the area of education, he did note that there were presently vocational and technical programmes that constituted a significant part of the country's educational effort. His interest in the current growth of this type of education was, in part, responsible for the reporting of courses taken or completed over "the past twelve-month period" in the 1967 Census Test. This element was to change to "courses ever taken" as the concept developed. At any rate, Dr. Kantner's report, together with this important observation on vocational training was accepted in principle, and was instrumental in opening the way for the development of viable concept.

It should be noted that, while the concept of vocational training underwent considerable change during the testing period, two restrictive features remained consistent throughout: (1) professional courses such as those leading to a university degree were to be excluded; and (2) leisure courses such as art, craft, language, investment or homemaking courses were to be excluded, unless they were directly related to the person's occupation. Otherwise, the concept of vocational training throughout its development may be taken in the broadest sense of the term, i.e., all types of apprenticeship and vocational courses taken at trade schools, technical institutes, community colleges and at work. In the statement below, elements of the census concept as employed

in the 1967 Census Test that were to remain permanently are noted, as well as those elements that would undergo change in subsequent tests and in the 1971 Census.

Elements to remain permanently

1. Courses taken at trade schools, technical institute, community colleges or at work.
2. Apprenticeship and vocational type courses.
3. Courses of at least three months duration.
4. Courses having been completed.

Elements to change

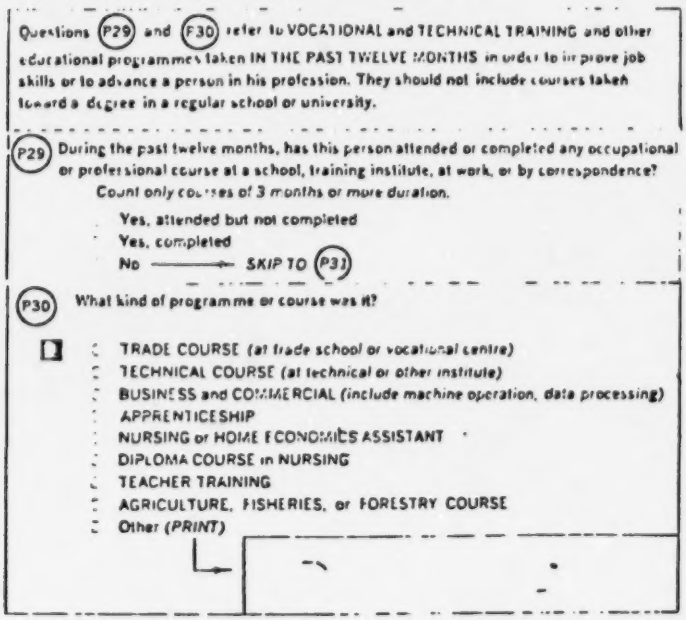
1. Courses reported by broad classification.
2. Courses taken over the past twelve months.
3. Courses currently being attended.
4. Multiple courses.
5. Courses taken by correspondence.

2.2 The Question Design

The initial design of the vocational training question as it was presented in the 1967 Census test is shown in Figure 1. Because of the limited amount of space available, it was decided that the most comprehensive coverage of vocational training could be obtained only be means of presenting broad classifications.

Figure 1

Vocational Training, 1967 Census Test, London, Ontario


Questions (P29) and (P30) refer to VOCATIONAL and TECHNICAL TRAINING and other educational programmes taken IN THE PAST TWELVE MONTHS in order to improve job skills or to advance a person in his profession. They should not include courses taken toward a degree in a regular school or university.
(P29) During the past twelve months, has this person attended or completed any occupational or professional course at a school, training institute, at work, or by correspondence?
Count only courses of 3 months or more duration.
Yes, attended but not completed
Yes, completed
No → SKIP TO (P31)
(P30) What kind of programme or course was it?
TRADE COURSE (at trade school or vocational centre)
TECHNICAL COURSE (at technical or other institute)
BUSINESS and COMMERCIAL (include machine operation, data processing)
APPRENTICESHIP
NURSING or HOME ECONOMICS ASSISTANT
DIPLOMA COURSE in NURSING
TEACHER TRAINING
AGRICULTURE, FISHERIES, or FORESTRY COURSE
Other (PRINT)

2.3 Response Rate Study

An assessment of the success of the vocational training question as presented in the 1967 Census Test, London revealed that a considerable amount of work was required in order to arrive at a suitable design for the 1971 Census. In the first place, studies indicated a relatively low response success rate of 78.4% for Question 29, and an exceedingly low rate of 23.0% for Question 30. In contrast, the average success rate for all other questions on education was 97.1% (Table I). A large part of the blame for the poor response rate to Question 30 was placed on the "skip" instruction in Question 29, i.e., the absence of an arrow from the "yes" category of this question to Question 30 caused many respondents to skip to Question 31.

A second difficulty which began to surface during the 1967 Census Test was the feeling of discontent among users with the broad classifications of courses that had been presented on the document for "mark-in" entries. For the most part, critics requested a break-down of these broad classifications, though the possibility of providing more space on the census document remained problematic.

Table I

Response Rates, 1967 Census Test, London

Educational Questions	Total	Success	Failure
24. School attendance	100.0	98.1	1.9
25. Highest grade	100.0	98.3	1.7
26. Drop-out question	100.0	98.0	2.0
27. Province attended	100.0	97.0	3.0
28. University degree	100.0	94.2	5.8
29. Completed P/S	100.0	78.4	21.6
30. Course name	100.0	23.0	77.0

3. The 1968 Census Test, Toronto

3.1 The Concept of Vocational Training

Prior to the 1968 Census Test there was a strong recommendation put forward by the Education Division, Statistics Canada, that the type of training taken at the secondary school level be considered as an element in the census concept of vocational training. Thus, Question 20 on the 1968 Census Test document (figure 2) requested each respondent to report his secondary schooling in terms of academic, commercial or trade/technical type training. This question did not survive beyond the 1968

Census Test however, largely because it was considered that questionnaire space was limited, and that it might be used more advantageously for questions on legitimate post-secondary education closely related to occupations. It was also noted that, in many cases, the type of course taken in secondary school was not related to the subsequent occupational activity of the respondent.

At this time, also, three important recommendations were made by the Department of Manpower and Immigration: (1) that respondents report courses "ever taken" rather than those takers over the twelve-month period immediately prior to the Census date; (2) that the date at which the respondent had taken his course be reported; and (3) that the respondent report whether or not he was making use of his training. The first two of these recommendations were adopted and retained permanently, while the third was included in the 1968 Census Test, but discontinued in later tests and in the final proposals for the 1971 Census. It was considered that adequate information on current usage of vocational training could be obtained by relating individual responses to the question on Occupations in the Labour Force area of the census questionnaire.

At this stage of development, elements of the concept of vocational training proposed for the 1968 Census Test in Toronto were:

Elements to remain permanently

1. Courses taken at trade schools, technical institutes, community colleges or at work.
2. Apprenticeship and vocational type courses.
3. Courses of at least three months duration.
4. Courses having been completed.
5. Courses "ever taken".
6. Time period in which course was taken.

Elements to change

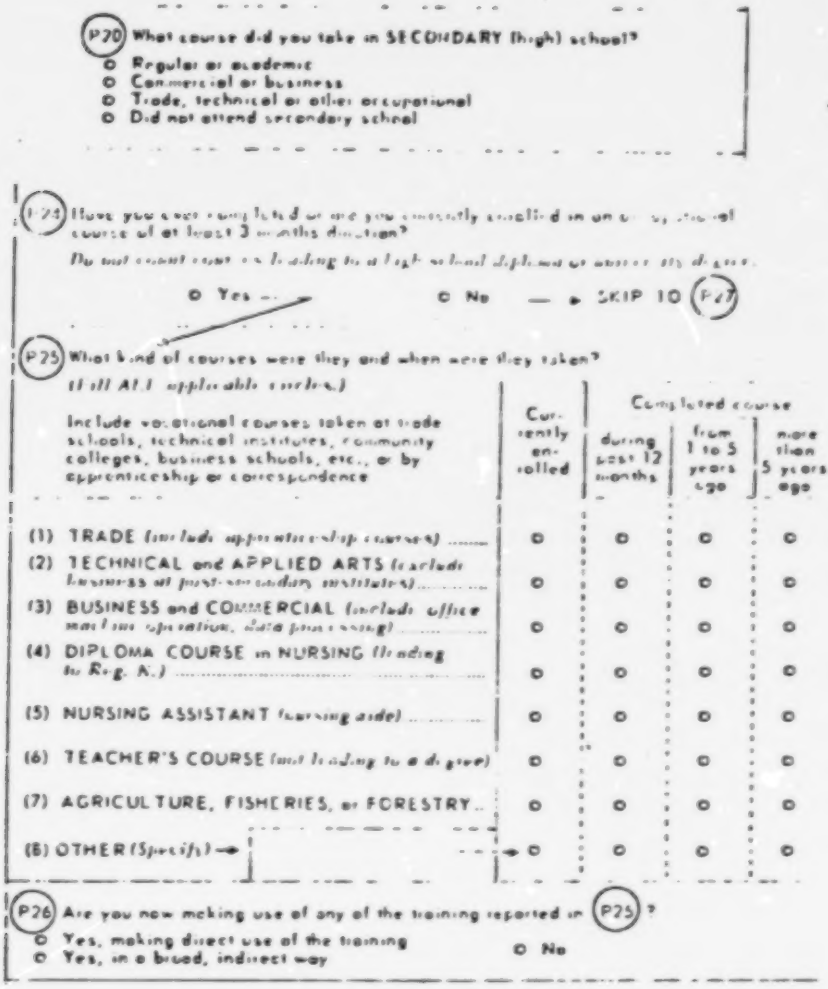
1. Courses reported by broad classification.
2. Courses currently being attended.
3. Multiple courses
4. Courses taken by correspondence.
5. Courses taken in secondary school.
6. Current use of vocational training.

3.2 The Question Design

One of the outstanding features of the question design for the 1968 Census Test was the presentation of a matrix-type format.

Figure 2

Vocational Training, 1968 Census Test, Toronto, Ontario



P70 What course did you take in SECONDARY (high) school?
- Regular or academic
- Commercial or business
- Trade, technical or other occupational
- Did not attend secondary school

P24 Have you ever completed or are you currently enrolled in an organized course of at least 3 months duration?
Do not count courses leading to a high school diploma or university degree.
- Yes → P25
- No → SKIP TO P27

P25 What kind of courses were they and when were they taken?
(Fill ALL applicable circles.)

Include vocational courses taken at trade schools, technical institutes, community colleges, business schools, etc., or by apprenticeship or correspondence	Currently enrolled	Completed course: during past 12 months	Completed course: from 1 to 5 years ago	Completed course: more than 5 years ago
(1) TRADE (include apprenticeship courses)	○	○	○	○
(2) TECHNICAL and APPLIED ARTS (exclude business at post-secondary institutes)	○	○	○	○
(3) BUSINESS and COMMERCIAL (include office machine operation, data processing)	○	○	○	○
(4) DIPLOMA COURSE in NURSING (leading to Reg. N.)	○	○	○	○
(5) NURSING ASSISTANT (nursing aide)	○	○	○	○
(6) TEACHER'S COURSE (not leading to a degree)	○	○	○	○
(7) AGRICULTURE, FISHERIES, or FORESTRY	○	○	○	○
(8) OTHER (Specify) →	○	○	○	○

P26 Are you now making use of any of the training reported in P25?
- Yes, making direct use of the training
- Yes, in a broad, indirect way
- No

3.3 Response Rate Study

During the 1968 Census Test, a full-scale response rate study was not carried out as had been done in 1967. However, ad hoc studies indicated that there was some improvement in response rates for the vocational training question in the 1968 test as compared to those calculated for the 1967 test, largely due to a change in questionnaire design, i.e., the inclusion of an arrow from the "Yes" instruction of P24 to P25, the main vocational training question. Two other observations, however, presaged a basic change in question design and vocational training concept. The first was the fact that many respondents experienced difficulties in reporting to a matrix-type question. There was evidence, for example that some had filled in two and three time intervals for a single course entry. The second was the growing preference among planners for single rather than multiple entries in the vocational training question, that course being entered which was the longest and most likely to be related to one's present occupational activity.

4. The 1969 Census Test, Sherbrooke, St. Catharines and Souris

4.1 The Concept of Vocational Training

As the 1971 Census approached there remained a considerable amount of dissatisfaction with the vocational training question as it had been presented in the London and Toronto tests. Uneasiness resulted from: (1) relatively poor response rates; and (2) the restrictive broad classifications of courses provided for mark-in entries. There was still a strong feeling that, in order for vocational training data to be of value, a more detailed break-down of courses was required, though this was not deemed feasible in view of space limitations on the questionnaire.

In addition to this evidence several persons, including Dr. K. Krotki (University of Edmonton) and Mr. W. Nesbit (Special Surveys Division, Statistics Canada) expressed doubts about the possibility of its success in the census. Mr. Nesbit, for example, had administered a similar question on vocational training in the Labour Force Survey of 1966, and the results had been so disappointing that there was some doubt as to whether they would be published in regular reports. The survey itself had consisted of seven questions on vocational training on a drop-off questionnaire. (This was in addition to five questions on the subject of education on the regular Labour Force Questionnaire.) At this point, census planners were asking themselves how much more difficult it might be to get good results on a census document when education is only a small part of a great array of questions.

Despite these reservations and doubts, it was firmly held that vocational training was such an important socio-economic indicator of the country's resources that it was essential to obtain some meaningful statistics through the census. With this in mind, it was decided to proceed with some major revisions of the vocational training question design for the 1969 Census Test in Sherbrooke, St. Catharines and Souris, and to attempt to avoid some of the difficulties encountered in the 1966 Labour Force experience, as well as in the earlier census tests. Hence, a plan for reporting all individual courses in terms of a "write-in" entry was proposed and it was also recommended that the length of the course be included in the concept.

Thus, the elements of the finalized concept of vocational training as it would be employed in the 1969 Census Test and ultimately in the 1971 Census were:

Elements in the concept of vocational training

1. Courses taken at trade schools, technical institutes, community colleges or at work.
2. Apprenticeship and vocational type courses.
3. Courses of at least three months duration.
4. Courses having been completed.
5. Courses "ever taken".
6. Time period in which course was taken.
7. Individual courses by "write-in" entry.
8. Length of course taken.

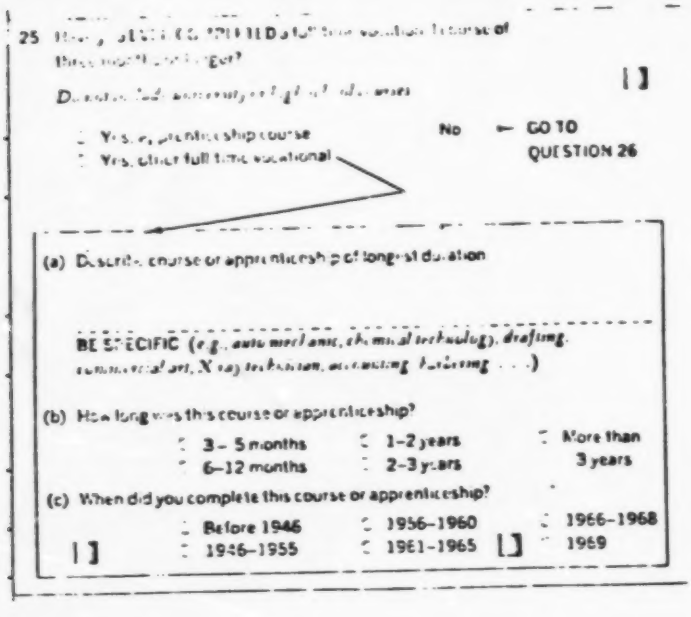
4.2 The Question Design

The final design of the vocational training question as it appeared on the 1969 Census Test is shown in Figure 3. This design had the definite advantage of avoiding the matrix-type question which had proven to be confusing to many respondents not accustomed to statistical tables. Moreover, the question now tended to integrate vocational training more closely with other questions on education. In the London and Toronto tests, the question on vocational training seemed to be addressed as a sort of afterthought.

The classification and coding system that would need to be developed with this form of vocational training concept and question design was deemed justified in that the reporting of individual courses would provide valuable data on the characteristics and distribution of trained personnel - information badly needed by the Department of Manpower and Immigration, among others. It was considered that the occupational coding classifications developed in the census would be the most satisfactory guide in planning vocational training course classifications, and that because the number of courses to be dealt with was much smaller than the number of occupations, the coding and classification system would be much simpler.

Figure 3

Vocational Training, 1969 Census Test, Sherbrooke, St. Catharines and Souris


25
[ ]
No → GO TO QUESTION 26
(a) Describe course or apprenticeship of longest duration
BE SPECIFIC (e.g., auto mechanic, chemical technology, drafting, commercial art, X ray technician, accounting, lathering ...)
(b) How long was this course or apprenticeship?
3 - 5 months
6 - 12 months
1 - 2 years
2 - 3 years
More than 3 years
(c) When did you complete this course or apprenticeship?
[ ]
Before 1946
1946 - 1955
1956 - 1960
1961 - 1965
[ ]
1966 - 1968
1969

4.3 Response Rate Study

The response rate study carried out during the 1969 Census Test showed the success rate for Questions 25(a), 25(b) and 25(c) to be 70.6%, 71.2% and 68.2% respectivel (Table 2). These rates were relatively low in view of the average success rate

for the remainder of the educational question (95.4%). However, a significant portion of the under-reporting for the vocational training questions was traced to a flaw in the document design, i.e., the placement of a single arrow from "yes, other full-time vocational" (25), to the write-in entry required for (25a). Thus in many cases, respondents had reported the type, duration, and length of course if the course was "vocational", but did not report in these categories if the course was "apprenticeship".

Table 2

Response Rates, 1969 Census Test, Sherbrooke
St. Catharines and Souris

Educational Question	Total	Success	Failure
19. School attendance	100.0	96.0	4.0
20. Highest grade	100.0	96.1	3.9
22. Province attended	100.0	95.6	4.4
23. Years of P/S	100.0	95.8	4.2
24. University degree	100.0	94.5	5.5
25. Completed P/S	100.0	94.7	5.3
25(a) Course name	100.0	70.6	29.4
25(b) Duration of course	100.0	71.2	28.8
25(c) Date course completed	100.0	68.2	31.8

5. The 1971 Census

5.1 The Vocational Training Concept

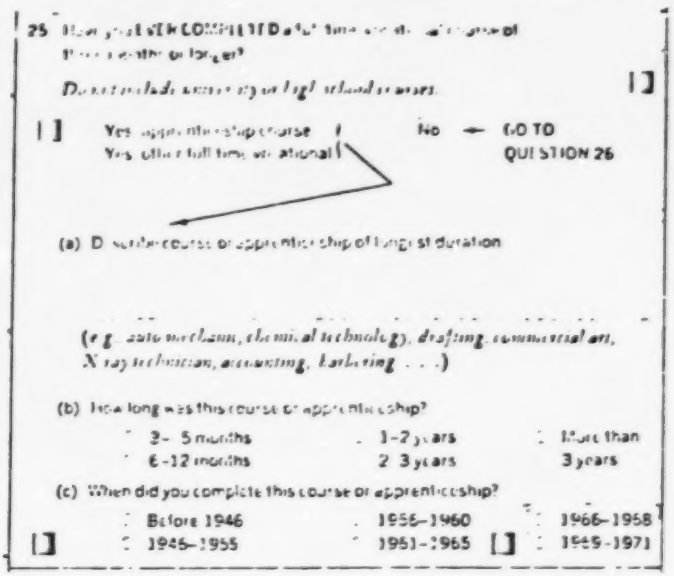
The concept of vocational training employed in the 1969 Census Test was also used in the 1971 Census. It was noted that this final version tended to accommodate the difference between transfer courses, and purely vocational type courses, given at the community colleges across Canada, and the Colleges d'enseignement général et professional (CGEP) given in the Province of Quebec. These institutions were mentioned specifically in the 1971 Census Instruction Booklet (Question 23), and by implication in Question 25.

5.2 The Question Design

With the exception of one small revision (bracketing of vocational and appreticesh the design of the vocational training question in the 1971 Census was identical to that employed in the 1969 Census Test.

Figure 4

Vocational Training, 1971 Census



5.3 Response Rate Study

Response rates for the vocational training questions taken during the 1971 Census were somewhat better than those for the 1969 Census Test. However, they were still significantly lower than rates for the remaining questions on education. Table 3 shows the response rates for Question 25(a), 25(b) and 25(c) to be 78.7%, 79.2% and 75.5% respectively. In contrast, the average rate for all other educational questions was 96.8%. In summary, it would appear that changes in design of the vocational training question have resulted in improved response rates, although these rates are still among the lowest, considering all questions on the census document.

Table 3

Response Rates, Canada, 1971 Census

Educational Question	Total	Success	Failure
19. School attendance	100.0	98.2	1.8
20. Highest grade	100.0	98.6	1.4
22. Province attended	100.0	97.8	2.2
23. Years of P/S	100.0	92.8	7.2
24. University degree	100.0	96.3	3.7
25. Completed P/S	100.0	96.9	3.1
25(a) Course name	100.0	78.7	21.3
25(b) Duration of course	100.0	79.2	20.8
25(c) Date course completed	100.0	75.5	24.5

6. The Development of the Vocational Course Coding and Classification System

6.1 The Sources of Course Listings

With the decision to have all responses to the "type of vocational training completed" in terms of a write-in entry, there arose the need for compiling, coding and classifying a comprehensive list of course names that would be required in the coding operation at the Regional Offices, and subsequently in the presentation of classified listings of the published data. At this initial stage of development, course names were obtained from the following sources: (1) courses reported in the 1966 Labour Force Survey of Vocational Training; (2) courses reported in the census tests carried out in London, Toronto, Sherbrooke, St. Catharines and Souris; (3) courses listed in course calendars of trade schools, business schools, technical institutes and community colleges; and (4) courses listed among the training programmes for registered apprentices.

7. The Design Pattern and Comment on its Application

7.1 Design Pattern: The Canadian Classification and Dictionary of Occupations

A two-digit code was adopted permitting the detailed classification of ninety-nine vocational training courses to be arranged in parallel fashion to the occupational groups used in the Canadian Classification and Dictionary of Occupations (C.C.D.O.). The manner in which the first seventeen vocational training course classifications were designed to pattern the occupational groups is illustrated in Appendix A.

7.2 Advantages of the Classification System

At this point in the development of the vocational training question, there was a relatively short period of time before the 1971 Census in which to compile, code, classify, check and print lists of course names that would be required for processing at the Regional Offices, therefore the convenience of having a pattern proven to be functional through usage was very helpful. In addition, a classification of vocational training courses arranged in parallel to the classification of occupations provided for an easy cross-reference system. Considerable use was made of this feature in the Regional Offices. There, coders were able to refer to the C.C.D.O. to determine the correct classification of any legitimate vocational training course name that may not have been included on existing lists in the Vocational Course Coding Book(R-122).

7.3 Difficulties in Classifying Courses

Because vocational training courses had never been coded into this system before, the task of assigning hundreds of course names, variations in names and sub-courses into their appropriate ninety-nine course classifications proved to be a lengthy and sometimes difficult operation. Moreover, many of the course names obtained from the above-mentioned sources appeared to be occupations rather than courses, and probably represented some training-on-the job in most cases. The decision to delete doubtful course names was difficult and time-consuming, requiring constant reference to course calendars, and to knowledgable personnel in the local community college and universities, and in the educational divisions of government

Figure 5

The Classification of Vocational Training Courses, 1971 Census

- Finance and business management
  - Accounting and auditing
  - Business administration
- Technical level, n.e.c.
  - Surveying
  - Drafting
  - Systems analysis and computer programming
  - Technology (architectural, engineering, mathematical and pure sciences, n.e.c.).
- Social work, religion and teaching
  - Social work and community services
  - Library, museum and archival sciences
  - Counselling (educational and vocational)
  - Remaining courses in the social sciences and related fields.
  - Religion
  - Elementary and secondary school teaching
  - Other teaching and instructing
- Health
  - Registered nursing and nursing assistant
  - Physical and occupational therapy(1)
  - Medical and dental technology
  - Remaining courses
- Applied arts, written communication and sports
  - Fine and applied arts(2)
  - Performing and audio-visual arts
  - Writing, editing and journalism
  - Advertising
  - Sports and athletics
- Office and secretarial
  - Typing, shorthand and secretarial sciences
  - Bookkeeping and account recording
  - Office machine (including computer operation)
  - Claim adjusting
  - Remaining clerical courses
- Salesmanship
  - Insurance, real estate and securities
  - Merchandising and other salesmanship
- Service
  - Protective
  - Chef training and commercial cooking
  - Hotel, motel and restaurant management
  - Funeral directing and embalming
  - Barbering and hairdressing
  - Laundering and dry-cleaning
  - Remaining service courses
- Primary industries
  - Crop farming
  - Livestock farming
  - Horticulture and gardening
  - General farming (including irrigation)
  - Fishing, hunting and trapping
  - Forest conservation
  - Logging
  - Mining and quarrying
- Processing
  - Food processing and inspecting
  - Textile processing
  - Remaining processing courses
- Machinists
  - Tool, die-making and machinists
  - Welding
  - Sheet metal working
  - Other metal working, patternmaking, and mould making.
  - Remaining machining courses (metal, wood, glass, etc.).
- Manufacturing, assembling and repairing
  - Boat and shipbuilding
  - Air conditioning and refrigeration
  - Electrical equipment, installation and repair
  - Radio, TV and other electronic equipment repair.
  - Cabinetmaking
  - Garment making and repair
  - Upholstering and repair
  - Locksmithing
  - Power sewing
  - Courses related to rubber and plastic
  - Auto body repair
  - Other auto mechanics and repair
  - Aircraft mechanics and repair
  - Heavy duty equipment, installation and repair
  - Office machine repair
  - Precision instrument, mechanics and repair
  - Watch, clock and jewellery making and repair
  - Small engine repair
  - Remaining courses in fabricating, assembling and repairing.
- Construction
  - Excavating, grading and paving
  - Lineman (power)
  - Lineman (telephone and telegraph)
  - Carpentry
  - Bricklaying and stone masonry
  - Plastering and lathing
  - Painting, decorating and paper-hanging
  - Pipe trades
  - Structural steel
  - Remaining courses in construction trades
- Transport field
  - Air transport operation
  - Ground support for air transport
  - Marine navigation
  - Marine engineering
  - Motor transport operation
  - Remaining courses in transport equipment operating.
  - Materials handling
- Equipment operation
  - Printing and bookbinding
  - Stationary engineering
  - Radio and television broadcasting equipment operating.
  - Telecommunications (excluding radio and television).
  - Motion picture projection and sound recording
  - Photographic processing
  - Remaining courses related to equipment operation.
- Supervisory courses
- Miscellaneous courses
- Not stated

departments and agencies, mainly the Education Division (Vocational Training Section) of Statistics Canada. As a general rule, however, in the compilation of courses, it was a case of erring on the side of including too much rather than too little.

Having noted this, it is not difficult to envision a more highly developed coding book than that which was employed in the 1971 Census. With this in mind, coders at the Regional Office across Canada were asked to note courses that did not appear verbatim in the Vocational Course Coding Book. (These are compiled in Appendix B). Many of these course names are simply verbal variations of those already appearing in the Coding Book; some are purely "on-the-job" training courses; others are sub-courses. Nevertheless, they merit examination by personnel working in the field of vocational training to determine whether they are authentic courses (according to the census concept) and if proven to be so they should be added to the existing lists for future use.

There was also the requirement of ensuring that, in accordance with the census concept of vocational training, university courses were not included in the compilation. This applied particularly to Categories 01 to 06 (Appendix A), made up mainly of post-secondary courses of an advanced technical nature. At the same time, some courses such as pharmacy and chemistry, appeared to be university courses, yet may not have been if they had been obtained in another country. As a reminder to coders, "not leading to a university degree" was appended to course names such as these. (Coders were also requested, in cases of uncertainty on this point, to check whether the respondent had indicated that he had a university degree, and, if so, to assume that he was probably reporting a university course.)

7.4 The Vocational Course Coding Book(R-122)

The compilation of 1,482 course names and their coding and classification into ninety-nine categories, resulted in the production of Form R-122, which was employed by coders at the Regional Offices across Canada to code the write-in entries. The Coding Book was divided into three sections: (1) Part 1 containing an alphabetical listing of 1,482 course names; (2) Part 2(a) consisting of a classified index summary of 99 detailed and 17 broad course groupings; and (3) Part 2(b) consisting of the total compilation of 1,482 course names listed under their appropriate 99 course classification categories.

8. Progress in the Development of the Vocational Training Course Coding and Classification System

8.1 Test of the Reliability of Coding Lists, June 1969

At the time of the 1969 Census Test, the Vocational Course Coding Book consisted of 917 verbal descriptions of courses classified into ninety-nine categories. From a sample of 1,360 course names reported in the 1969 Census Test, the clerical staff was able to code 1,080 or 79.8% from the existing lists (Table 4).

It was apparent from the results of this test that a considerable improvement in course listings was requisite before the 1971 Census. Several months of work followed in which additional sources were searched for course

names including: (1) responses provided in the 1969 Census Test; (2) quarterly reports from the Education Division, Statistics Canada; (3) the publication, "Post-Secondary Technical and Vocational Courses in Publicly-Operated Institutions; and (4) trade school, technical institute and community college calendars. (When final course lists were submitted for printing in Form R-122, the total number of courses amounted to 1,482).

8.2 Difficulties and Progress in Compiling, Classifying and Coding Courses

The broad concept of vocational training adopted for the 1971 Census, i.e., all vocational and apprenticeship type courses of at least three months duration taken at trade schools, technical institutes, community colleges or at work very nearly precluded the possibility of obtaining complete course listings from existing published sources. There are, for example, many courses provided by private industry and business that would conform to the broad concept of training proposed by the census, yet not appear in the regular published lists of vocational and apprenticeship courses. (Undoubtedly many course not listed in the R-122 and discovered by coders at the Regional Offices, as shown in Appendix B, are in this category).

Difficulties were encountered also in readily obtaining the names of "sub-courses" that are related to the broader fields of study, particularly in the case of highly technical subjects. For example, under the broad course name of Dental Assistants and Nursing Assistants, there are sub-courses in Practical Nursing, Orderly Training, Hospital Care, Industrial First Aid, Home Nursing and Home Making; while under the broad course heading of Physical and Occupational Therapy (Paramedical Courses) there are sub-courses in: Masseur (Masseuse), Speech Therapy, Hospital Sciences and Chiropodist. This sub-courses were not obtained from existing publications, but from listings associated with the Research and Statistics Branch, Department of National Health and Welfare.

And finally, mention should be made of difficulties experienced in creating the French language version of the vocational course lists. This problem became apparent in the 1969 Census Test when 65.3% of the course names in Sherbrooke (largely French-speaking) were able to be coded directly from the course listings in contrast to 89.2% for St. Catharines and 84.3% for Souris. Following this test, however, course listings in the French language were checked by the Census staff and by the Bureau of Translation, Department of the Secretary of State. In addition, course lists in C.E.G.E.P. calendars were examined to ascertain the most recent and acceptable expressions in the French language. As a result of this work, marked improvement occurred as indicated in the next section.

8.3 Test of Reliability of Coding Lists, June 1970

Evidence of improvement in the Vocational Course Coding Book is shown in Table 4. This second test, using 1,008 reportings from the 1969 Census Test showed that 922 or 91.5% could be coded directly from the more highly developed course listings. It is apparent also that marked improvement had been made in the French language version, – responses from Sherbrooke having been found directly in the listings rising from 65.3% in the 1969 test to 90.4% in the 1970 test.

Table 4

Test of Reliability of the Vocational Course Coding Book
June 1969 and June 1970

Location	June 1969					
	Total response		Response found in listing		Response not found in listing	
	No.	%	No.	%	No.	%
TOTAL	1,360	100.0	1,080	79.4	280	20.6
St. Catharines	693	100.0	618	89.2	75	10.8
Sherbrooke	527	100.0	344	65.3	183	34.7
Souris	140	100.0	118	84.3	22	15.7

Location	June 1970					
	Total response		Response found in listing		Response not found in listing	
	No.	%	No.	%	No.	%
TOTAL	1,008	100.0	922	91.5	86	8.5
St. Catharines	429	100.0	397	92.5	32	7.5
Sherbrooke	448	100.0	405	90.4	43	9.6
Souris	131	100.0	120	91.6	11	8.4

9. Suggestions for Future Censuses

9.1 The Vocational Course Coding Book will always be an essential instrument for use at the Regional Offices when the vocational training question appears in a census. It is therefore important that the course listings be continually up-dated as this field of education expands. Those courses reported by coders at the Regional Offices during the 1971 Census (Appendix B) should be screened carefully and added to the listings Course calendars from trade schools, technical institutes and comunity colleges across Canada (presently available in the Demographic Sector) should be used to up-date and expand course listings provided in the vocational Course Code Book.

9.2 It is quite likely that the broad concept of vocational training adopted into the 1971 Census tended to include courses that were close to being on-the-job training types with very little formal training such as classroom instruction. Therefore, consideration should be given to refining the concept of vocational training, i.e., requesting that only registered apprenticeship type training be reported; and in the case of vocational training, that only those courses taken at an established trade school, technical institute or community college be reported. (An alternative approach would be to have those respondents with completed course report the type, or name, of the institution at which they had received their training).

9.3 While no mention has been made of the adequacy of the classification system in terms of distributions, it is apparent from verbal comments that a further break-down of some course categories would be desireable, possibly employing a three-digit coding system. (Comments on this problem relate to Nursing and Nursing Assistants which were grouped together, Electrical Construction and Electrical Appliance Repair which were grouped together, and so on). Some examples of specific fields of study where a more detailed classification of courses may be required are:

Registered Nursing and Nursing Assistant Courses	Registered Nursing Nursing Assistants Nursing Aides and Orderlies
Medical and Dental Technology	Medical Technologists and Technicians Dental Technologists and Technicians
Typing, Shorthand and Secretarial Science	Secretarial Commercial Secretarial Medical and Dental Secretarial Clerk Typist
Electrical Equipment Installation and Repair	Electrical Construction Electrical Appliance Repair Electrical Industrial
Auto Mechanics and Repair	Automotive Service Technology Auto Transmission Auto Electric and Carburation

9.4 Additional information to assist coders at the Regional Office stage of processing is required. Some examples of supplementary instructions that should be included in the Vocational Course Coding Book(R-122) are:

9.4.1 Abbreviations for courses which are in common use by students and college personnel, but not necessarily familiar to coders.

9.4.2 A list of organizational names which may imply a variety of courses, e.g., City and Guilds. This expression was frequently used by persons from Britain who actually had taken courses in electricity, construction, etc. It was necessary to refer to their reporting of occupation in order to indentify the course name in these cases.

9.4.3 A list of professional courses (university courses) should be available for reference purposes. It was often necessary for coders to distinguish between professional courses and vocational training courses.

9.4.4 Training in the use of the C.C.D.O. on which the vocational course coding and classification is based, should be supplied. Similarly the availability of, and training in the use of course calendars is an aid in new course names to their correct classification. This is particularly helpful when dealing with those courses which are innovative, or being newly developed by the various technical institutes and community colleges.

10. Conclusions

10.1 Relatively low response rates have characterized the vocational training question in the Census (2.3, 4.3, 5.3).

10.2 Because "write-in" answers appear to elicit the best response rates for the vocational training question, and because dominant users prefer detailed to broad classifications, this question in the census will always entail a large coding operation at the Regional Office stage of processing(3.1,9.3).

10.3 The Vocational Course Coding Book(R-122) requires continual up-dating as this field of education expands(9.1).

10.4 Additional instructions for coding are required at the Regional Office stage of processing(9.4).

10.5 Should the question be used in the Census again, consideration should be given to a more detailed classification of courses(7.1, 9.3).

10.6 Consideration should be given to refining the concept of vocational training in future Censuses(9.1, 1.1)

Linkage of Vocational Courses with Occupation Classifications

Vocational Courses		Occupation		
Course code	Name of Course	Major group	Occupation classification	Occupation code
		11	Managerial, Administrative and Related Occupations:	
01	Business administration		Government and other officials and administration.	111, 113 114
02	Accounting and auditing		Occupations related to management and administration.	117
03	Courses in pure science, engineering and mathematical technoliges.	21	Occupations in Natural Sciences, Engineering and Mathematics:	211-218
04	Surveying		Surveys	2,161
05	Draughting		Draughtsmen	2,163
06	Systems analysis and computer programming.		Systems analysts and computer programmers.	2,183
		23	Occupations in Social Sciences and Related Fields:	
07	Social work and community services.		Occupations in social work and related fields.	233
08	Library, museum and archival sciences.		Occupations in library, museum and archival sciences.	235
09	Counselling (educational and vocational.		Educational and vocational counsellors.	2,391
10	Other courses in the social sciences.		Other occupations in social sciences.	239
11	Courses in religion	25	Occupations in Relgion	
		27	Teaching and Related Occupations:	
12	Courses for elementary and secondary school teaching.		Elementary and secondary school teaching.	273
13	Courses for other teaching or instructing.		Other teaching and related occupations.	279
		31	Occupations in Medicine and Health:	
14	Registered nursing and nursing assistant courses.		Nurses, graduate	2,131
			Nurses-in-training in hospital	3,133
			Nursing assistants, nursing aides and orderlies.	3,135
15	Physical and occupationsal therapy.		Physical and occupational therapists.	3,137
16	Medical and dental technology.		Medical technologists and technicians.	3,155
			Dental hygienists, assistants and technicians.	3,157
17	Other courses in the health field.		Other occupations in medicine and health.	315

Appendix B

Vocational Training Course Names Submitted by Coding Staffs at all Regional Offices, 1971 Census

Air navigation 83
Cytology 16
Electrical Artificer (RCNVR) 56
Topography 03
Hoisting engineer 89
Soldering (any industry except jewellery) ... 49
Druggest assistant 17
Glass cutting 53
Ink matcher 47
Candy maker 45
Roll turner 48
Machine setter 48
Scale mechanic (any industry)..... 72
Orthopaedic mechanic..... 53
Screw machine set-up man 48
Travel agent 27
Instrument maker 72
Airplane fitter 72
Marine fireman 91
Oenologist (wine maker) 45
Bay inspector (railways) 73
Hospital management 02
Aircraft electrician 66
Template maker 51
Cytotechnologist 16
Railway apprentice 88
Work study practitioner course..... 02
Bible school 11
Motor vehicle rates 65
Hoisting engineer 89
Laster weapons technician 30
.N.C. Mechanical 72
rmament fitter 72
xplosives 82
iderographer..... 53
nsulation mechanic 82
edical assistant 14
toreman (computer) 27
elephone cable splicing 75
id sonitaire 17
amille des metiers 99
nsulation..... 82
ocational Bible course 11
ransportation management 88
ignals course 93
lay and tile engineering 77
eographical surveys 03
sage dynamite 44
.ectrologist 34
ise de la meteorologie 06
.pping and filling 90

Document examination 30
Technique insulation foam 82
Patent illustiator 18
Dynamiting 44
Skiptending (mining) 44
Carman apprentice 67
Engine room artificu's course 91
Rescue course 30
Industrial journeyman merchant 29
Air navigator 83
Avianics 83
Tool room improver (or man) 27
Conservation officer training school 06
Canadian War staff course 98
Invironmental sanitation 17
Core maker 47
R.C.N. supply officer course 27
Glass blowing (indus. or scientific) 53
Electrical fitter 56
Job analysis and classification 02
Officers' training school (Women's royal army corps)..... 98
Signal maintenance 88
Stereo plotter (cartography) 04
Aircraft design 06
Engine artifican 67
Ironmolder 47
Telephony (use if telephone) 56
French Pol 58
Land development inspector 02
Engineering fitter 67
Bookkeeping 40
Construction wireman 56
Air cooled engines (non trnspt.) 71
Aircraft sheet metal 50
Dale Carnegie, public speaking course .. 29
Locomotive engineer 88
Electrican contracting 56
Radiography 16
Anvil man 48
Arnmunitian technician 51
Small arms 53
Computer repairman 56
Electrical artificer 56
Topography 03
Ukainiology 99
Aero engine mechanic 66
General business 27
Automotive engineering 06
Linguistics 15
Wireless electrical mechanic 57

Appendix B (Cont'd)

Connunicator research 93
Hoisting engineer 89
Air navigation 83
Aero engine technician 66
Bornour 03
City and Guilds (N.O.S.) 99
Druggist assistant 17
Ink matcher 47
Transportation project analyst 02
Communication engineering (Bell Canada) 06
Design engineering (Bell Canada) 06
School teacher (National Theatre 13
Medicare receptionist (R.C.N.) 27
Non-destructive testing (inspects industrial) machines) 72
CYTO technology 16
Ballet dancing college 19
Aero engine mechanic 66
Credit institute course 02
Industrial merchant 29
Meteorological technician..... 06
Tractor driving 87
Hospital administration 02
Telephone cable splicer 75
Aircraft engineering 06
Rodman 06
Alarm and sofety systems 30
Automotive electrical carburation 65
Grapno-analyst 19
Institute of chartered secretary..... 02
Royal Navy apprentice (aircraft) 99
Aerial photography 18
Horse shoeing 51
Cream tester 45
Sheet metal mechanic 50
Management development 02
Sanitary inspector 07
Construction electrician 56
Chicken sexing 38
Mortician 33
Identification (RCMP) 30
Advanced electronics 06
Parks technology 06
Housekeeping..... 36
Shoe fitter 29
Saddle making 72
Fireman's ticket (Boilers) 88
Accoustrial mechanic 16
Translator 20
Scuba diving 36
Mobile support equipment operator training . 88
Cytotechnology course 16
Psychology 07
Chauffeur 88
Food service supervisor 32

Brewmaster 45
Telecontrol technician 06
Resources management technology 06
Job relations training 02
Clinical psychology course 16
Elevator and escalator mechanic 67
Life saving (swimming) 36
Industrial radiographer 06
Schomsteinfiger (Chimney sweep) 36
Surgery technician 16
Industrial safety supervisor 06
Communications researcher 06
Cable and wireless operator 93
Grocier and provisions merchant 29
Hygiene technician 16
Cable splicing 75
Traffic and transportation 88
Practical agriculture electrician 40
Telephone communications 75
Wireless mechanic 57
Cobol-one 05
Sewing instructress 13
Flight navigator 83
Wheelwright 67
Elevator mechanic 67
Miller (flour) 45
Cement finisher 77
Press technician 90
Stockbroker 28
Signalman (RCN) ..... ?
Oceanography 06
Physical education 13
Gréeur 54
Hygiene industrielle 36
Formation des cadres 98
Fencing - teacher 13
Articled clerkship 02
Herbagiste 17
Sevilculture 42
Pathology technician 17
Veterinary technician 1 (16)
Upper air observer 06
Ships rigger 54
Transportation and customs 99
Lab. animal technician 16
Cash register maintenance 68
Tissuer de brocke 51
Filter/Turner 47
Recovery engineer 47
Scaphandrier (Diver) 36
Tech empreintes digitales 30
Picture conservation 18
Sugar chemist 06
PBX operator 25
Anti-pollution chemical and biological ... 06

Appendix B (Cont'd)

Invisible mending 59
Electronic flight simulator 83
Backhoe operator 23
Roetenographer 16
Nuclear medical technician 16
Pesticide control (landscape gardener) 39
Industrial radiography 06
Polygraphic (lie detectors, etc.) 30
Confectioner 45
Journey man mailer 27
Accredited appraisn (property Tax) 02
Basic hydrology 06
Footwear Institute of Canada 99
Auto glass installation 72
Locomotive mechanic 67
Education Physique 22
Maquilloge 34
Infirmière de liaison 14
Traffic and transportation dispatcher 88
Problèmes économeque de l'emploi 07
Conseiller en main-d'oeuvre (C.M.P.) 02
Auxiliare familiale 36
Cours du syndicalisme 02
Designing pipework (Senior Designer) 06
Banque Provincial Directeur adjoint 02
Card-grinder 67
Hotels des postes 99
Styliste en maquilloge 34
Grain inspector (Federal) 45
Tonnelier-couper 72
Piquage de tour-vendeuse and ajusteuse de chausseures 60
Non distructive testing 99
Adult re-education 16
Technicien en aérosol 16
Simultaneous consecutive interpreter 20
M.V.R. (Motor vehicle repair) 65
Hydromatic engineering 99
Airframe mechanic (RCAF) 66
Plumber, tinsmith 80
Audimeter operator (hearing) 17
Investigation 99
Bandsaw filler (filer?) 53
Limeur 72
Interpreter's course 20
Braille transcriber 27
G.T.A. assistant 99
Radiocollege of Canada 13
Flerograph 25
Flight safety officer 84
Construction plater (steel) 81
Canadian securities course 28
Soudure mechanique (automobile) 65

Registered industrial accountant 01
Oil burner technician 71
Engineering tracer 06
Ironwork and Boilermaker 81
Engineering craft apprentice 06
Auto spray painter 64
New cleaning milhouse 99
Court recorder 27
Church organ builder 72
Armured vehicle mechanic 67
Marine fitter 80
Harness maker 72
Horology 70
Mechanician 72
Backer (construction) 82
LVATC (Life underwriting training) 28
Sewage plant operator's course 91
Dynamics supervision 98
N.R.A. 99
Grounds - keeper 39
Flatlock operator 62
Safecy equipment technician 06
Capillliculteur 16
Technicien en refrigération 55
Technicien en diesel 67
Pressier 90
Opérateur de pelle mecanique 73
Technique en énergie fluide 06
Currier (leather dresser) 47
Midwifery (nursing - aide) 14
Pastoral Bible Training 11
Scientific instrument maker 69
Drapery 18
Cloak and mantles (ST Paul's England) 18
Pastry maker 45
Explosives (mining) 44
Prototype instrument maker 69
Air cooled engine servicing 88
Cadet deck officer 85
Mailer 27
Travel agent 27
Travel consultant (tourist agent) 27
Traffic management (brokerage) 02
Phepiotherapist 16
Pilot instructor 13
Radio proficiency certificate 19
Assayer 06
Grophoanalysis (graphologist) 19
Rapid calculation 27
Cable communication ..... 74 or 75
Industrial math 06
Meterorology (airports) 06
Marine engineer mechanic 86

Appendix B (Cont'd)

Ministry course	11
Capillary health specialist	17
Refrigeration technician	55
Diesel technician	67
Pressman (printing)	90
Steam shovel operator	73
Certified drug clerk (works in pharmacy)	27
Veterinary technician	17
Precision tool inspector	69
Butter making	45
Dairy herdsman	36
Surgical instrument mechanic	72
Electrical wiring	56
Communications technician	93
Engineer (locomotive)	88
Teleprint operator	93
Renal dialysis technician	16
Electrocardiograph technician	16
Railway machinist	67
L.V.T.C. (Life underwriting training)	28
Commercial business course	27
Tobacco technology	06
Aero/Construction/aeronautical	66
Diving deep sea (commercial)	36
Scale mechanic	72
Steam engineering	91
Stereotyper	90
Auto trimmer (upholsteser)	61
Tractor training (diesel)	88
Machine fitter	48
Tipping and filling	48
Nursery school teaching	13
Dental nursing	14
Pediatric nursing	14
Projectionist	94
Seaman second class inland waters	85
Marine design engineering	86
Railway station master	88
Railway carman	88
Steelplate fitting	81
Nursing assistant	14
Casualty Care attendant	14

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